

Appendix A: Scoping Decision Document



**In the Matter of the Route Permit
Application for a 345 kV Transmission
Line from Monticello to St. Cloud**

**ENVIRONMENTAL IMPACT STATEMENT
SCOPING DECISION DOCUMENT
PUC Docket No.ET2, E002/TL-09-246**

The above matter has come before the Director of the Office of Energy Security (OES) for a decision on the Scope of the Environmental Impact Statement (EIS) to be prepared on the Northern States Power Company (Xcel Energy), a Minnesota corporation, and Great River Energy, a Minnesota cooperative corporation (Great River Energy) route permit application before the Minnesota Public Utilities Commission (Commission) for a proposed transmission line between Monticello and St. Cloud, Minnesota, under the full permitting process (Minnesota Rules 7850.1700 to 7850.2700).

PROJECT DESCRIPTION

The applicants propose to construct and operate a 345 kilovolt (kV) transmission line, approximately 28 miles long, extending from the existing Monticello Substation in Monticello, Minnesota to the new Quarry Substation, to be located west of St. Cloud, Minnesota, in Stearns County. The applicants have proposed three possible routes for the transmission line, a preferred route and two alternate routes. These routes would cross portions of Wright and Stearns counties. The Project would also include the construction of a new substation. The Quarry Substation would be located west of St. Cloud in unincorporated Stearns County.

The applicants are requesting a 1,000 foot wide route width for the majority of the proposed project. The maximum route width of 1.25 miles is requested in specific areas to accommodate site-specific considerations and substation interconnection.

The applicants propose using primarily single-pole, double-circuit capable, self-weathering or galvanized steel structures that will range in height between 130 and 175 feet. The span length between structures will typically range in length between 600 and 1,000 feet depending on site-specific considerations. Although the proposed line will be built using double circuit capable poles, only one circuit will be installed for this Project. The second position would be available for a possible, future additional circuit. The right-of-way for the proposed 345 kV electrical transmission line generally would be 150 feet in width.

Construction of the proposed Quarry 345/115 kV Substation will require a graded, fenced area of six to 15 acres within a total area of up to 40 acres. As previously identified, Applicants have identified two Proposed Quarry Substation Siting Areas, both of which are comparable in their utility. The southern proposed site is the Quarry Substation Siting Area Alternate 1. The northern proposed site is the Quarry Substation Siting Area Alternate 2. The Quarry Substation Siting Area Alternate 1 is generally located west of St. Cloud, south and east of the existing railroad and northeast of the intersection of I-94 and State Highway 23. The Quarry Substation Siting Area Alternate 2 is generally located west of St. Cloud, north and west of the existing railroad, west of Highway 23, and generally northwest of the intersection of I-94 and Highway 23.

Equipment to be installed includes 345 and 115 kV equipment (including a transformer, switches, control panels, and circuit breakers), foundations and structures. The substation yard will also require access roads.

Proposed construction of the transmission line would begin in fourth quarter of 2011 with completion by second quarter 2012.

PROJECT PURPOSE

The Project is designed to address three needs: local community reliability, regional reliability and generation outlet support. The demand for electric power in the St. Cloud area has exceeded the capability of the area's electrical system to reliably provide power during contingencies. The Project will provide sufficient additional capacity to meet the St. Cloud area's needs until approximately 2035 to 2040. The proposed 345 kV transmission line will also help improve the reliability of the bulk electric system serving Minnesota and portions of neighboring states. Finally, the Project provides a necessary 345 kV connection to the Twin Cities that will help facilitate additional generation development, including renewable generation, in eastern North Dakota and western Minnesota.

REGULATORY BACKGROUND

Applicants' request for a Certificate of Need for the Project and associated system connections has been granted by Commission. In the Matter of the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and others for Certificates of Need for the Three CapX2020 345 kV Transmission Projects, Docket No. ET2, E002, et al./CN-06-1115 (Certificate of Need Application). On February 27, 2009, Administrative Law Judge (ALJ) Beverly Heydinger issued Findings of Fact, Conclusions and Recommendations and recommended approval of the Twin Cities to Fargo Project (this project has been divided into to separate route applications: the Monticello to St. Cloud Application and the Fargo to St. Cloud Application) in a double-circuit compatible configuration. The Minnesota Public Utilities Commission (Commission) concurred with the ALJ's recommendation and granted an order with conditions on May 22, 2009. The Commission reconsidered and issued another order on August 10, 2009 to amend conditions designed to ensure that the capacity of the Brookings to Dakota County line would be available to transmit electricity from renewable sources.

The applicants filed a route permit application on April 8, 2009, under the full permitting process of the Power Plant Siting Act (Minnesota Statute 216E). The application was accepted as complete by the Commission on May 13, 2009. Under the full permitting process the Commission has one year from the date the application was accepted as complete to make a decision on the route permit.

SCOPING PROCESS

Route permit applications for high voltage transmission lines are subject to environmental review in accordance with Minnesota Rules 7850.1700 to 7850.2700 (full permitting process). Scoping is the first step in the permitting process after application acceptance. The scoping process has two primary purposes, to ensure that the public has a chance to participate in determining what routes and issues to study in the EIS, and to help focus the EIS on the most important issues surrounding the route permit decision.

OES staff collected and reviewed comments on the scope of the EIS by holding two Scoping Meetings and convening an advisory task force. The OES also accepted written comments through July 24, 2009. This scope identifies potential human and environmental issues and project route or substation site alternatives that will be addressed in the EIS. The scope also presents an anticipated schedule of the environmental review process.

Advisory Task Force

The advisory task force (ATF) was established by the OES. The ATF was charged with: (1) identifying local site or route specific impacts and issues of local concern, and (2) identifying alternative transmission line routes or substation locations that may maximize positive impacts and minimize or avoid negative impacts of the project. The task force met three times between June and August 2009. The recommendations of the

ATF have been considered during the preparation of this scope and can be found in the AFT Final Report dated September 2009. The ATF report is available at <http://energyfacilities.puc.state.mn.us/Docket.html?Id=19957>.

Public Scoping Meetings

Two public information meetings were conducted by the OES on July 2, 2009 at 1:00 pm and 6:00 pm in the Clearwater Township Hall. Approximately 100 people attended the two public meetings. The scoping meetings provided the public an opportunity to learn about the proposed project and the route permitting process, review the route permit application, ask questions and submit comments. A court reporter was present at each of the public meetings and transcribed questions asked and comments made by the public as well as responses from the OES and the applicants.

Public Comments

The public comment period ending on July 24, 2009, provided the public an additional opportunity to submit comments and alternative routes to be considered for the scope of the EIS. A total of 64 comments were received by the close of the comment period.

All of the written and oral comments submitted at the scoping meetings along with comments received by mail and email were reviewed and entered into a database. Each comment was evaluated for issues or concerns that should be considered for detailed evaluation in the EIS and were classified based on the major topics of the comments. Table 1 below summarizes the major issues raised in these comments, as well as the relative frequency the issue was raised. Table 2 summarizes common concerns about the project.

Table 1. Major Issues* Raised During Public Scoping Period

| Issue | Number of Comments |
|--------------------------------------|--------------------|
| Biological Issues | 1 |
| Cultural Resources | 3 |
| EMF | 6 |
| General Routing/Alternatives | 19 |
| Land Use | 5 |
| Right of way Acquisition/Easements | 4 |
| Socioeconomic issues/Property Values | 2 |
| Visual and Aesthetic Impacts | 2 |
| Water Resources | 6 |

* Other included issues related to: data in route permit application, general opposition to the project, project need, and easement negotiation process, among others.

Table 2. Common Concerns Identified During Scoping

| Common Concerns | Number of Comments |
|---|---------------------------|
| Desire for transmission line to be located within or along existing transportation corridors including I-94, I-10, CR 137, and an abandoned railroad. | 11 |
| Concerns that transmission line will negatively affect property values. | 4 |
| Desire to consider the existing Benton County line as a reasonable alternative. | 4 |
| Concern regarding potential negative effects to water resources such as Neenah Creek, Fish Lake, the Fish Creek Basin, and the Mississippi River. | 4 |
| Concerns that the line will impact the Chapel Hill historic area. | 2 |

The public and the ATF suggested route modifications and alternative routes during the scoping process. The ATF recommended four additional route alternatives to the applicants' proposed routes. The public generally suggested route modifications to avoid specific resource areas, and expressed a preference for using existing infrastructure rights-of-way.

The task force meeting reports and scoping meeting comment reports, as well as each individual comment (letter or email) are available on the project website maintained by OES at: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=19957>

MATTERS TO BE ADDRESSED

Having reviewed the matter, consulted with OES Energy Facility Permitting staff, and in accordance with Minnesota Rule 7850.2500, I hereby make the following Scoping Decision.

The applicants' route permit application describes their route analysis and contains the information required by Minnesota Rule 7850.1900, subp. 2, as determined by the Commission. The EIS will summarize the process the applicants' used to identify, evaluate, and select the routes. The EIS will also verify and supplement information provided in the route permit application and will incorporate the information by reference as appropriate.

The EIS on the proposed Monticello to St Cloud 345 kV transmission line project will address and provide information on the following matters:

- I. INTRODUCTION**
 - A. Project Description
 - B. Purpose of the Transmission Line
 - C. Project Location
 - D. Route Description
 - E. Route Width
 - F. Rights-of-Way
 - G. Project Cost

- II. REGULATORY FRAMEWORK**
 - A. Certificate of Need
 - B. Route Permit
 - C. Environmental Review Process

III. ENGINEERING AND OPERATION DESIGN

- A. Transmission Line Conductors
- B. Transmission Line Structures
- C. Substations

IV. CONSTRUCTION

- A. Transmission Line and Structures
- B. Substations
- C. Property/Right-of-Way Acquisition
- D. Cleanup and Restoration
- E. Damage Compensation
- F. Maintenance
- G. Underground Options

V. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

The EIS will include a discussion of the human and environmental resources potentially impacted by the project and its alternatives. Potential impacts of the proposed project and each alternative considered will be described. Based on the impacts identified, the EIS will describe mitigative measures that could reasonably be implemented to reduce or eliminate the identified impacts.

- A. Environmental Setting
- B. Socioeconomic Setting
- C. Human Settlement

- 1. Noise
- 2. Aesthetics
- 3. Displacement
- 4. Existing Utilities (pipelines, propane tanks, septic systems)
- 5. Domestic Water Well Installation/Maintenance

- D. Public Health and Safety

- 1. Electric and Magnetic Fields
- 2. Implantable Medical Devices
- 3. Stray Voltage

- E. Recreation

- 1. Parks (city, county, state, and federal)
- 2. Trails
- 3. Scenic Waterways

- F. Transportation and Public Services

- 1. Emergency Services
- 2. Airports
- 3. Highways and Roads (including scenic highways/byways and rest stops)

- G. Interference

- 1. Radio and Television (digital and satellite)
- 2. Internet
- 3. Cellular Phone
- 4. GPS-Based Agriculture Navigation Systems

H. Archaeological and Historic Resources

I. Zoning and Compatibility/Federal, State and Local Government Planning

J. Land-Based Economies

1. Agriculture
 - a. Prime Farmland
 - b. Aerial Crop Spraying/Dusting
2. Forestry
3. Mining

K. Property Values

1. Residential
2. Industrial
3. Agriculture

L. Air Quality (As it pertains specifically to this transmission line project only.)

M. Natural Resources

1. Surface Water
 - a. Lakes
 - b. Surface Flows
2. Groundwater
3. Wetlands
4. Floodplains
5. State Wildlife Management Areas/Scientific Natural Areas
6. National Wildlife Refuge/Waterfowl Production Areas
7. Forests

N. Flora

O. Fauna

P. Rare and Unique Natural Resources/Critical Habitat

VI. ALTERNATIVE ROUTES AND SUBSTATION LOCATIONS TO BE EVALUATED IN THE EIS

The EIS will identify and evaluate alternative routes and route segments to the proposed project. Two of the four ATF identified routes and one of two substation location alternatives will be evaluated in the EIS and are presented below and illustrated in Figure 1.

The ATF Group 3 Alternate 3

The ATF-proposed Group 3 Alternate 3 originates at the Monticello Substation and travels in a northwesterly direction for approximately four miles in Sherburne County. The route would turn in a westerly direction for approximately 15 miles where it would parallel existing road right-of-way and transmission infrastructure. The route would run in a southwesterly direction crossing the Mississippi River for approximately 1.5 miles. The route then turns north for two miles into the St Cloud area. The route runs east for approximately six miles through St Cloud and then turns north and proceeds for approximately three miles where it would terminate at the proposed substation area.

The ATF Group 3 Alternate 2

The ATF-proposed segment alternate Group 3 Alternate 2 would commence at the Applicant's Alternate B route in Silver Creek Township, Wright County, and travel west for approximately six miles avoiding a wet area in the far west corner of the segment. The route would turn straight north for approximately 1.5 miles where it would reconnect with the applicant Alternate B.

The ATF Substation Alternate Group 4-1

This location covers approximately 13 total acres in the southeast corner of T124 R29 S36 and the northeast corner of T124 R29 S1 in Stearns County. The area is bounded to the north by CSAH 6, to the east by the eastern boundary of T124 R29 S1 and to the south and west by I-94.

VII. REJECTED ALTERNATIVE ROUTES AND SUBSTATION LOCATIONS

Two of the alternative routes suggested by the ATF (Proposed Routes Group 4 – Alternate 1 and Group 4 – Alternate 2) will be described in the EIS, but will not be considered for further study or evaluation in the EIS. The route segments were rejected as they did not meet the stated need of the project as defined in the Certificate of Need (CapX 345 kV Transmission Projects, Docket No. ET-2, E-002, et al./CN-06-1115). Additionally, in some instances, they had more impacts relative to the criteria used by the Commission in route permit determinations as defined in Minnesota Statute 216E.03, subd. 7.

The applicants conducted a study (the CapX 2020 Vision Plan) to ensure system reliability which forecasted the amount of system-wide growth the region would experience by 2020, and concluded that the region would experience transmission overloads, outages, and voltage problems unless new capacity were added. They then considered which arrangement of transmission facilities could best accommodate this growth under different scenarios. The applicants developed routes to ensure system reliability by avoiding existing transmission infrastructure in the area. There are several other transmission corridors that originate at the Monticello Substation. To ensure system reliability the applicant has avoided placing new transmission infrastructure in those areas in the event of a severe weather incident or some other event that would cause outages.

ATF Group 4 Alternate 1

The ATF-proposed route Group 4 Alternate 1 will not be considered for further study or evaluation because it does not meet the Purpose and Need approved by the Commission through the Certificate of Need (CON) process. This route would parallel an existing 230 kV transmission line and an existing transmission 115 kV line which commences at the Monticello Substation, crosses the Mississippi River, and travels north through Becker County for approximately seven miles, then travels in a northwesterly direction through Sherburne County for approximately seven miles. The route then turns west for approximately eight miles and parallels existing road right-of-way (there is no existing transmission infrastructure in this eight mile segment). The route then turns north for two miles into the St Cloud area. The route runs west for approximately six miles through St Cloud and then turns north and proceeds for approximately three miles where it would terminate at the proposed substation area.

This ATF alternate route was dropped from consideration because it parallels an existing 230 kV transmission line and a 115 kV transmission line. This route would not meet the purpose and need of the project because it would not provide system reliability and diversity. This route also crosses the Mississippi River twice. There would also be impacts to existing and planned development, including potential relocations, in the Waite Park area along Highway 23.

ATF Group 4 Alternate 2

The ATF proposed Group 4 Alternate 2 will not be considered for further study or evaluation because it does not meet the purpose and Need approved by the Commission through the CON process. This route would parallel an existing 230 kV and 115 kV which commences at the Monticello Substation, crosses the Mississippi River and travels north for approximately four miles. The route would run in a northwesterly direction for 12 miles paralleling Highway 10. The route then turns north for two miles into the St. Cloud area. The route runs west for approximately six miles through St Cloud and then turns north and proceeds for approximately three miles where it would terminate at the proposed substation area.

This ATF alternate route was dropped from consideration because it is in an area with a high density of transmission infrastructure. As described above, this route would not meet the purpose and need of the project because it would not provide system reliability and diversity. This route also crosses the Mississippi River twice. This route also impacts the Clear Lake airport and would not comply with FAA regulations. There would also be impacts on several center-pivot irrigation systems and likely impacts on historical sites. There would also be impacts to existing and planned development in the Waite Park area along Highway 23, in addition to impacts to existing urban areas in Big Lake and Clear Lake.

ATF Substation Alternate Group 4-2

This location covers approximately 17 total acres in T124 R29 S13 and T124 R29 S24 in Stearns County. The southern boundary is 138th St. The western boundary is a north/south line beginning approximately 2700' east of 86th Ave along 138th street. The eastern boundary is a north/south line beginning approximately 3800' west of 75th Ave along 138th. The northern boundary is an east west line approximately 1000' north of the southern boundary of T124 R29 S13.

This location was dropped from consideration in the EIS because it is only a viable substation option if the ATF Group 4 Alternate 1 or Alternate 2 routes are considered. Since both these transmission line routes are eliminated from further consideration, the ATF Substation Alternate Group 4-2 is also eliminated.

VIII SUMMARY OF ALTERNATIVES TO BE ANALYZED IN THE EIS

The Project Description section and sections VI and VII of this Scoping Decision Document discuss alternative routes and substations that will be analyzed in the EIS. In summary, the following transmission line routes and substation locations will be carried forward into the EIS (see also Figure 1):

- The Applicants' Preferred Route
- The Applicants' Alternate Route A
- The Applicants' Alternate Route B
- The ATF Group 3 Alternate 3
- The ATF Group 3 Alternate 2
- The Applicants' Quarry Substation Alternate 1
- The Applicants' Quarry Substation Alternate 2
- The ATF Substation Alternate Group 4-1

The analysis will address the resources identified in Section V of this scoping decision document. To provide a robust analysis, the EIS will consider the allocation of resources within each given route with respect to reasonable transmission line alignments within each route. In some cases, these alignments will primarily consist of the centerline of the proposed route, while in other cases the alignments will be driven by the presence of pre-existing infrastructure within the route, such as roadways and transmission lines. This approach will enable an informed decision on the potential of the route alternatives to provide a transmission line that avoids or minimizes social, economic, and environmental impacts.

IX. REQUIRED PERMITS AND APPROVALS

The EIS will include a list and description of permits that will be required for the project.

X. ISSUES OUTSIDE THE SCOPE OF THE EIS

The following issues will not be considered or evaluated in the EIS:

- A. Any route or substation alternatives not specifically identified in this scoping decision
- B. Questions of need, including size, type, and timing; questions of alternative system configurations; or questions of voltage.
- C. The no-build option regarding the high voltage transmission line.
- D. The impacts of specific energy sources, such as carbon outputs from coal-generated facilities.
- E. Policy issues surrounding whether utilities or local-government should be liable for the cost to relocate utility poles when roadways are widened.
- F. The manner in which land owners are paid for transmission rights of way easements, as that is outside the jurisdiction of Public Utilities Commission.

XI. SCHEDULE

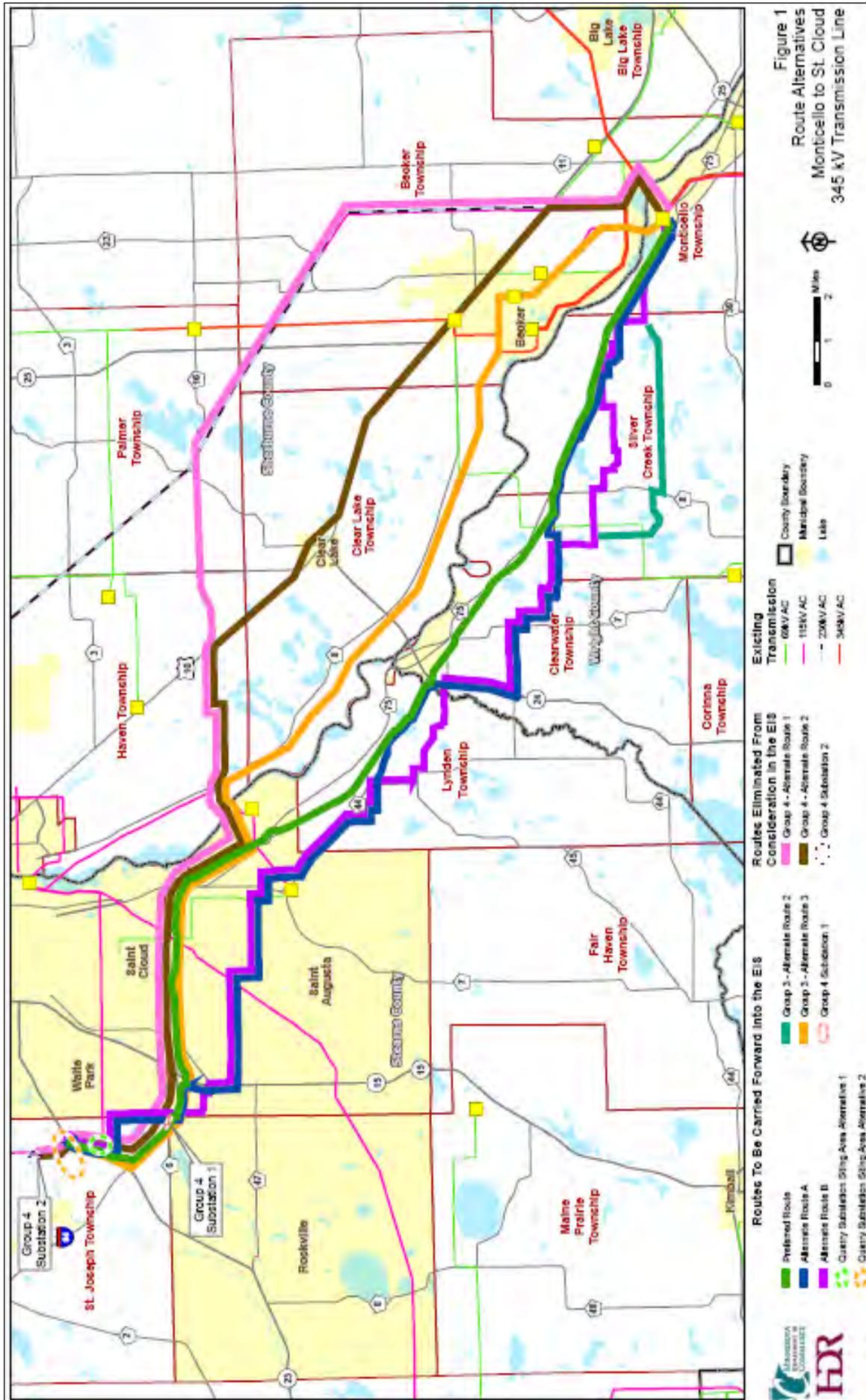
The Draft EIS shall be completed and available by January 2010. A public hearing will be held in Clearwater Township Hall before an Administrative Law Judge after the Draft EIS has been issued and notice served. The exact date of the public hearing has not been set.

Signed this 9th day of October, 2009

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE
OFFICE OF ENERGY SECURITY



William Glahn, Director



Appendix B: Detailed Route Descriptions

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Preferred Route and Proposed Quarry Substation Sites 1 and 2

The Preferred Route connects the existing Monticello Substation and the proposed Quarry Substation, paralleling the I-94 corridor for the majority of its length. As discussed in Sections 2.3 and 4.3, multiple alignments associated with the Preferred Route were also identified. The proposed alignments within the Preferred Route include an alignment that allows for maximum interstate corridor sharing (located five feet from the edge of the I-94 right-of-way); an alignment that allows for minimum interstate corridor sharing (located at least 25 feet from the edge of the I-94 right-of-way); and an alignment that involves no interstate corridor sharing (located at least 75 feet from the edge of the I-94 right-of-way).

Through various phases of analysis, Applicants determined that the proximity of the transmission line facilities to existing transportation corridors has a significant effect on the overall impacts of the Project. In general, the overall impacts are minimized if the facilities are located immediately adjacent to existing roadways or interstates because this alignment maximizes the ability of the new facilities to share the existing right-of-way.

For the purpose of clearly describing the Preferred Route, existing linear features that will be paralleled by the proposed 345 kV transmission line are identified for reference. The requested route width is based on a distance of 500 feet on either side of these linear features for a total width of at least 1,000 feet. Section 2.3.2.6 discusses locations where the Applicants seek additional route widths.

Preferred Route

The description of the Preferred Route includes a discussion of the location of the maximum interstate corridor sharing alignment. Applicants recognize that other alignments with a lesser degree of corridor sharing will be in the same general location but will be adjusted depending on the final selection.

The Preferred Route extends southwest from the existing Monticello Substation, on property currently owned by Northern States Power Company, until intersecting an abandoned railroad corridor. The Preferred Route then extends along the abandoned railroad corridor to the northwest. The maximum corridor sharing alignment will extend along the southwest side of the abandoned railroad corridor.

East of Barton Avenue NW, the Preferred Route parallels County Road 75 for a short distance, crosses the road, and then continues along County Road 75 until just east of Clementa Avenue NW.

Description of Proposed Routes

The maximum corridor sharing alignment will move from the northeast side of County Road 75 to the southwest side, and then continue along the southwest side of the road. Before reaching Clementa Avenue NW, the Preferred Route crosses County Road 75 and parallels I-94 for a short distance, crossing back across County Road 75 west of Clementa Avenue NW, and then continuing along County Road 75. The maximum corridor sharing alignment will move from the southwest side of County Road 75 to the northeast side of I-94, and then back to the northeast side of County Road 75.

Just east of Elder Avenue NW, the Preferred Route again crosses County Road 75 to extend along I-94. The maximum corridor sharing alignment moves from the southwest side of the abandoned railroad corridor to the northeast side of I-94, to the north side of 150th Street NW, and back to the northeast side of I-94. The Preferred Route will be up to 1.25 miles in width in this general area.

Just past Grover Avenue NW, the Preferred Route crosses County Road 75 and extends along the road for a short distance until crossing back across County Road 75 to resume parallel with I-94. The maximum corridor sharing alignment moves from the northeast of I-94 to the northeast side of County Road 75, and back to the northeast side of I-94.

Where County Road 7 is parallel to I-94, the maximum corridor sharing alignment moves from the northeast side of I-94 to the southwest side for a short distance. The alignment then returns to the northeast side of I-94 just west of the Stearns County and Wright County boundary. From this point to just west of the intersection of I-94 and County Road 143, the Preferred Route will be up to 1.25 miles in width. The maximum corridor sharing alignment in this area follows the northeast side of I-94.

Just east of 222nd Street E, the Preferred Route will be up to 1.25 miles in width. The maximum corridor sharing alignment in this area follows the northeast side of I-94. From 222nd Street E to Glenn Carlson Drive, the Preferred Route follows the northeast side of I-94. From Glenn Carlson Drive to just east of 240th Street, the Preferred Route will be up to 1.25 miles in width. The maximum corridor sharing alignment in this area follows the northeast side of I-94 until 8th Avenue. The alignment will then follow 8th Avenue until just past the intersection of 8th Avenue and County Road 75. From this intersection, the alignment extends west for a short distance before following the northeast side of I-94.

Just east of Cooper Avenue S, the maximum corridor sharing alignment moves from the northeast side of I-94 to the southwest side for a short distance and then back to the northeast side of I-94. Just west of County Road 136, the alignment crosses again from the northeast side of I-94 to the southwest side. East of County Road 6, the alignment crosses to the northeast side of I-94.

At the intersection of State Highway 23 and I-94, the Preferred Route extends north along Highway 23 to the Quarry Substation Siting Area 1. The maximum corridor sharing alignment parallels the northeast side of I-94 and the east side of Highway 23 until terminating at the Quarry Substation Siting Area 1.

Quarry Substation Siting Area 1

The Quarry Substation Siting Area 1 is located along the east side of State Highway 23 approximately 0.5 miles northeast of the I-94 and Highway 23 interchange. Up to 40 acres will be acquired for the proposed Quarry Substation. The width of any of the Proposed Routes will be up to 1.25 miles in width in the vicinity of the Quarry Substation Siting Area 1 to allow for substation interconnection flexibility.

Quarry Substation Siting Area 2

The Quarry Substation Siting Area 2 is located along the north side of State Highway 23 approximately one mile northwest of the I-94 and Highway 23 interchange. The width of any of the Proposed Routes will be up to 1.25 miles in width in the vicinity of the Quarry Substation Siting Area 2 to allow for substation interconnection flexibility.

Route A

Similar to the Preferred Route, Route A is at least 1,000 feet in width. There are existing linear features that occur within Route A of which Applicants intend to parallel. For the purpose of clearly describing Route A, the existing linear features that will be paralleled by the proposed 345 kV transmission line are identified for reference. The requested route width is based on a distance of 500 feet on either side of these linear features for a total width of at least 1,000 feet. The Route A maximum corridor sharing alignment, which maximizes interstate corridor sharing when located immediately adjacent and at least five feet from the edge of the I-94 right-of-way, will extend along these features. Locations where Applicants seek additional route width are discussed in detail in Section 2.3.2.6.

Route A extends southwest from the existing Monticello Substation, on property currently owned by Northern States Power Company, until intersecting an abandoned railroad corridor. Route A then extends along the abandoned railroad corridor for a brief distance before crossing I-94. Route A extends along I-94 to the northwest. The maximum corridor sharing alignment will move from the southwest side of the abandoned railroad corridor to the southwest side of I-94. Route A diverges from I-94 at 135th Street NW and extends west along 135th Street NW. Route A then extends north and west along Baker Avenue NW, and then north along Barton Avenue NW for a short distance before resuming parallel with I-94. The maximum corridor sharing alignment will move from the southwest side of I-94 to the north side of 135th Street NW.

The alignment then crosses 135th Street NW to the south side of the road, continuing along the west and south side of Baker Avenue NW. The alignment moves from the south side of Baker Avenue NW to the west side of Barton Avenue NW, and then to the southwest side of I-94.

Just southeast of Curtis Avenue NW, Route A crosses I-94 to then extend along County Road 75. The maximum corridor sharing alignment moves from the southwest side of I-94 to the northeast side of County Road 75. Route A crosses County Road 75 east of Elder Avenue NW and then extends along I-94. The maximum corridor sharing alignment moves from the northeast side of County Road 75 to the northeast side of I-94.

West of Elder Avenue NW, Route A crosses I-94 and extends west to Ferman Avenue NW. Route A extends south along Ferman Avenue NW, west along 150th Street NW, and north along Grover Avenue NW. The maximum corridor sharing alignment moves from the northeast side of I-94 to the west side of Ferman Avenue NW. The alignment then extends along the south side of 150th Street NW before crossing to the north side of the road. The alignment continues along the north side of 150th Street NW and then along the east side of Grover Avenue NW.

Route A extends west for a short distance, north, and then back west to County Road 7. The maximum corridor sharing alignment moves from the east side of Grover Avenue NW to extend west, north, and back west to County Road 7. Route A extends north along County Road 7 and west along 160th Street NW. The maximum corridor sharing alignment moves from the east side of County Road 7 to the south side of 160th Street NW for a short distance, crosses to the north side of the road, and then crosses back to the south side of the road.

At the intersection of State Highway 24 and 160th Street NW, Route A extends north along Highway 24. The maximum corridor sharing alignment moves from the south side of 160th Street NW to the east side of Highway 24. Route A crosses Highway 24 to then extend to the northwest along I-94. The maximum corridor sharing alignment moves from the east side of

Highway 24 to the southwest side of I-94, and then crosses to the northeast side of I-94, south of where County Road 143 intersects I-94. The route width of Route A will be up to 1.25 miles in width in this general area.

North of where County Road 143 intersects I-94, Route A crosses I-94 and extends northwest along County Road 143. The maximum corridor sharing alignment moves from the northeast side of I-94 to the southwest side of County Road 143. Just east of County Road 44, Route A extends west from County Road 143 for a short distance, briefly north, then west again for a short distance, and then north to County Road 44. The alignment moves west for a short distance from the southwest side of County Road 143, briefly north, then west for a short distance, and then north to County Road 44.

Route A extends to the northwest along County Road 44. The maximum corridor sharing alignment extends along the southwest side of County Road 44. Southeast of the intersection of County Road 44 and County Road 7, Route A extends north for a short distance, west along 238th Street and crosses County Road 7, briefly north, and then west to 41st Avenue. The alignment extends north from the southwest side of County Road 44 to 238th Street. The alignment then extends west along the north side of 238th Street and north along an existing 115 kV transmission line after crossing County Road 7. The alignment then extends briefly north along the existing 115 kV transmission line, then west to 41st Avenue.

Route A extends north along 41st Avenue to County Road 115. The maximum corridor sharing alignment extends along the east side of 41st Avenue. Route A and its alignment then extend west to State Highway 15.

Upon reaching Highway 15, Route A extends north along the highway to I-94 and Highway 15 interchange where Route A then extends west along I-94. The maximum corridor sharing alignment extends along the west side of Highway 15 and the southwest side of I-94.

Route A diverges from I-94 and extends north along County Road 137. The maximum corridor sharing alignment moves from the southwest side of I-94 to the east side of County Road 137 for a short distance, crosses to the west side of County Road 137, and continues north along the road. At a point generally northeast of the State Highway 23 and I-94 interchange, Route A extends west to Highway 23 and then slightly north to the Quarry Substation Siting Area 1. The alignment will be located along the east side of Highway 23 until terminating at the Quarry Substation Siting Area 1.

Route B

Similar to the Preferred Route and Route A, Route B is at least 1,000 feet in width. There are existing linear features that occur within Route B of which Applicants intend to parallel. For the purpose of clearly describing Route B, the existing linear features that will be paralleled by the proposed 345 kV transmission line are identified for reference. The requested route width is based on a distance of 500 feet on either side of these linear features for a total width of at least 1,000 feet. Locations where Applicants seek additional route width are discussed in detail in Section 2.3.2.6.

Route B extends southwest from the existing Monticello Substation, on property currently owned by Northern States Power Company, until intersecting an abandoned railroad corridor. Route B then extends along the abandoned railroad corridor for a brief distance before extending west across I-94 until 127th Avenue NE. Route B then extends northwest and west along 127th Avenue NE until 135th Street NW. The Route B alignment moves from the west side

of the abandoned railroad corridor, west across I-94, to the northeast side of 127th Avenue NE. The alignment crosses 127th Avenue NE and extends along the southwest side of the road until the road turns west. Where 127th Avenue NE extends to the west, the alignment will extend along the south side of the road, cross to the north side for a brief distance, and then back to the south side until the intersection of 127th Avenue NE and 135th Street NW (also identified as Aladdin Avenue NW in this area).

Before 135th Street NW turns west, Route B diverges from the road and extends west along a property line for a short distance before extending back north to converge again with 135th Street NW. At 135th Street NW, which becomes Baker Avenue NW, Route B extends west, then north, then west again along Baker Avenue NW. The Route B alignment extends along the west side of the 135th Street NW for a short distance, west along a property line and back north along a property line to converge again with 135th Street NW, which becomes Baker Avenue NW. The alignment extends along the south side of Baker Avenue NW and 137th Street NW to Clementa Avenue NW.

Route B extends south along Clementa Avenue NW and then west along 135th Street NW. The Route B alignment extends south along the east side of Clementa Avenue NW and then west for a brief distance along property lines until the intersection of 135th Street NW and Crofoot Avenue NW.

Route B then extends west along 135th Street NW, then south for a brief distance along Dempsey Avenue NW, then west along 134th Street NW. The Route B alignment follows the north side of 135th Street NW for a short distance before crossing over to the south side of the road. The alignment then follows the south side of the road until Dempsey Avenue NW, where it extends south along the east side of Dempsey Ave NW. The alignment then extends along the north side of 134th Street NW.

East of the intersection of 134th Street NW and County Road 8, Route B extends north and then west until County Road 8. The Route B alignment extends northwest for a short distance before turning west along a property line for a short distance. The alignment then extends north and west along property lines to County Road 8.

Route B extends west along 140th Street NW until Fillmore Avenue NW, where it then extends north along Fillmore Ave NW until 150th Street NW. The Route B alignment will follow the north side of 140th Street NW until Fillmore Ave NW where it will turn north and follow the west side of Fillmore NW for a short distance, before crossing to the east side of Fillmore Ave NW and following the road until 150th Street NW.

Route B extends west along 150th Street NW, and north along Grover Avenue NW. The Route B alignment extends along the south side of 150th Street NW before crossing to the north side of the road. The alignment continues along the north side of 150th Street NW and then along the east side of Grover Avenue NW.

Route B extends west for a short distance, north, and then back west to County Road 7. The Route B alignment moves from the east side of Grover Avenue NW to extend west, north, and back west to County Road 7. Route B extends north along County Road 7 and west along 160th Street NW. The Route B alignment moves from the east side of County Road 7 to the south side of 160th Street NW for a short distance, crosses to the north side of the road, and then crosses back to the south side of the road.

At the intersection of State Highway 24 and 160th Street NW, Route B extends north along Highway 24. The Route B alignment moves from the south side of 160th Street NW to the east side of Highway 24.

Route B follows Highway 24 north until it intersects with County Road 7 just south of I-94. Route B then extends west until 195th Street E where it continues to follow 195th Street E for a short distance. The Route B alignment extends along the east side of Highway 24 until it intersects County Road 7 where it turns west and follows a property line until 195th Street E where it extends along the north side of 195th Street E for a short distance. Route B then extends north, then west, then northwest until 200th Street E. The Route B alignment parallels a property line from 195th Street E north for a short distance before turning west and following another property line. It then extends cross country in a northwest direction for a short distance. Route B then follows 200th Street E until County Road 44, where it turns north and follows County Road 44 until 203rd Street. The route extends west along 203rd Street until County Road 44, then turns north and follows County Road 44 until just south of the intersection with County Road 143. The Route B alignment follows the north side of 200th Street E until County Road 44 where it follows the east side of County Road 44 until 203rd Street. The alignment then turns and follows the north side of 203rd Street until County Road 44, where it extends along the east side of County Road 44 until just south of the intersection with County Road 143.

Just east of County Road 44, Route B then extends west from County Road 143 for a short distance, briefly north, west for a short distance, and then north to County Road 44. The Route B alignment moves west for a short distance from the southwest side of County Road 143, briefly north, west for a short distance, and then north to County Road 44. Route B extends to the northwest along County Road 44. The Route B alignment extends along the southwest side of County Road 44. Southeast of the intersection of County Road 44 and County Road 7, Route B extends north for a short distance, west along 238th Street and crossing County Road 7, briefly north, and then west to 41st Avenue. The Route B alignment extends north from the southwest side of County Road 44 to 238th Street. The alignment extends west along the north side of 238th Street and then north along an existing 115 kV transmission line after crossing County Road 7. The alignment then extends briefly north along the existing 115 kV transmission line, and then west to 41st Avenue. Route B extends north along 41st Avenue to County Road 115. The Route B alignment extends along the east side of 41st Avenue. Route B and its alignment then extend west to State Highway 15. Upon reaching Highway 15, Route B extends north along the highway until just north of 250th Street. Route B then extends west along a property line until County Road 137. The Route B alignment extends along the west side of Highway 15. Route B then extends north along County Road 137 until I-94 where it crosses I-94 and continues along County Road 137. The Route B Alignment extends along the east side of County Road 137 south of I-94. The Route B alignment then follows the east side of County Road 137 north of I-94 before moving to the west side for a short distance. At a point generally northeast of the State Highway 23 and I-94 interchange, Route B extends west to Highway 23 and then slightly north to the Quarry Substation Siting Area 1. The Route B alignment extends along the east side of Highway 23 until terminating at the substation siting area.

Route C

Similar to the Preferred Route, Route C is at least 1,000 feet in width. Route C is intended as an alternative to the portion of Route B that runs between Aladdin Ave NW and Ferman Ave NW in Silver Creek Township.

Route C begins at Aladdin Ave NW and heads southwest and west following 127th St NW. At CSAH 8 the route heads north to 128th St NW. At 128th St NW the route heads west, following 128th St NW to Ferman Ave NW. At Ferman Ave NW the route heads north to 140th St NW where the route becomes Route B.

Route D

Similar to the Preferred Route, Route D is at least 1,000 feet in width. There are existing linear features that occur within Route D of which Applicants intend to parallel. For the purpose of clearly describing Route D, the existing linear features that will be paralleled by the proposed 345 kV transmission line are identified for reference. The requested route width is based on a distance of 500 feet on either side of these linear features for a total width of at least 1,000 feet. Locations where Applicants seek additional route width are discussed in detail in Section 2.3.2.6.

Route D follows the existing Osseo-Monticello-St Cloud 115kV line north out of the Monticello Substation for a distance of approximately 1.75 miles. It then follows a field line northwest for approximately 0.6 miles until it meets back up with the Osseo-Monticello-St Cloud 115kV line. The route continues along the 115kV line for several miles until it reaches a GRE 115kV line in Haven Township. The route follows the GRE line west and southwest for a distance of approximately 0.7 miles. The route continues southwest until it reaches I-94. At I-94 the route proceeds to the northwest following I-94 until it reaches the ramp for MN-23. At the MN-23 ramp the route heads northeast and north until it reaches MN-23. The route then follows MN-23 to the proposed substation site.

Quarry Substation Site 3 with 115 kV Interconnect

This location covers approximately 13 total acres in the southeast corner of T124 R29 S36 and the northeast corner of T124 R29 S1 in Stearns County. The area is bounded to the north by CSAH 6, to the east by the eastern boundary of T124 R29 S1 and to the south and west by I-94.

Appendix C: Wetland Classification

Appendix C - Wetland Classifications

Cowardin Classification

Palustrine

Palustrine wetlands are non-tidal and tidal-freshwater wetlands in which vegetation is predominantly trees (forested wetlands); shrubs (scrub-shrub wetlands); persistent or non-persistent emergent, erect, rooted herbaceous plants (persistent and non-persistent-emergent wetlands); or submersed and (or) floating plants (aquatic beds). Palustrine wetlands also include intermittently to permanently flooded open-water bodies of less than 20 acres in which water is less than 6.6 feet deep. Palustrine wetlands can be further divided based on the dominant plant life form or the physiography and composition of the substrate (e.g., aquatic bed, emergent, forested, scrub-shrub, unconsolidated bottom, or unconsolidated shore) and the seasonal water regime (e.g., intermittently exposed, semipermanently flooded, seasonally flooded, saturated, or temporarily flooded).

Palustrine wetlands within the corridor occur in a variety of forms, size, depth, and type/classification. The wetlands can range from a few feet across and only inches deep, to basins 500 acres in size with depths of up to six feet. Most of the plants within the small to medium sized seasonal wetlands support facultative wetland species (FACW) interspersed with a few obligate (OBL) species in the deeper portions of the basin.

Riverine

Riverine wetlands are non-tidal and tidal-freshwater wetlands within a channel. Vegetation, when present, is predominantly non-persistent emergent plants (non-persistent-emergent wetlands), or submersed and (or) floating plants (aquatic beds), or both. Riverine wetlands, defined by their close associations with perennial streams, occur along stream channels and are often associated with riparian areas. These areas are also supported by groundwater drainage associated with floodplains and by periodic flooding events. Riverine wetlands are divided into categories based on the nature of the adjacent stream (e.g., upper perennial or intermittent). Riverine wetlands can be further divided based on the dominant plant life form of the physiography and composition of the substrate (e.g., unconsolidated bottom unconsolidated shore, or streambed) and the seasonal water regime (e.g., permanently flooded, semi-permanently flooded, seasonally flooded, or temporarily flooded).

There are three types of stream systems in the region: perennial, intermittent, and ephemeral. Perennial streams have visible water flowing above the streambed year-round; intermittent streams have water that appears both above and below the streambed; and ephemeral streams or watercourses flow only in response to precipitation. Vegetation growing along intermittent streams often has access to the water table or at least a greater quantity of soil moisture due to the proximity of the water table. Therefore, this creates distinct hydrologic characteristics and vegetation composition differences that distinguish intermittent streams from ephemeral streams. Generally, only perennial and intermittent streams can support riparian areas, while ephemeral streams generally do not possess the hydrologic conditions that allow riparian vegetation to grow. Although water flows down ephemeral streams periodically, the water table

does not occur sufficiently close to the soil surface to allow hydrophytic vegetation to become established. Vegetation growing along ephemeral watercourses may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but generally there are no dramatic compositional differences between the two.

Circular 39 Classification

Type 1: Seasonally Flooded Basin, Floodplain Forest

Wetlands in seasonally flooded basins or forest floodplains include soils covered with water, or soil waterlogged during variable seasonal periods but usually well-drained during much of the growing season. This type is found both in upland depressions and in overflow bottomlands. In uplands, basins or flats may be filled with water during periods of heavy rain or melting snow. Vegetation varies greatly according to season and duration of flooding: from bottomland hardwoods to herbaceous plants. Where the water has receded early in the growing season, smartweeds, wild millet, fall panicum, redroot cyperus, and weeds (i.e. marsh elder, ragweed, and cockleburs) are likely to occur. Shallow basins that are submerged only temporarily usually develop little or no wetland vegetation.

Type 2: Wet Meadow, Fresh Wet Meadow, Wet to Wet-Mesic Prairie, Sedge Meadow, and Calcareous Fen

Wet meadow, fresh wet meadow, wet to wet-mesic prairie, sedge meadow, and calcareous fen wetlands include soils usually without standing water during most of the growing season, but waterlogged within at least a few inches of the surface. Meadows may fill shallow basins, sloughs, or farmland sags, or these meadows may border shallow marshes on the landward side. Vegetation includes grasses, sedges, rushes and various broad-leaved plants. In the North, representative plants are sedges, rushes, redtop, reedgrasses, manna grasses, prairie cordgrass, and mints. Other wetland plant community types include low prairies, sedge meadows, and calcareous fens.

Type 3: Shallow Marsh

Shallow marsh wetlands include soil usually waterlogged early during the growing season and often covered with as much as six inches or more of water. Shallow marshes may nearly fill shallow lake basins or sloughs, or may border deep marshes on the landward side. Seep areas on irrigated lands often develop as shallow marshes. Common vegetation includes grasses, bulrushes, spikerushes, and various other marsh plants such as cattails, arrowhead, pickerelweed, and smartweeds.

Type 4: Deep Marsh

Deep marsh wetlands include soil usually covered with six inches to three feet or more of water during the growing season. Deep marshes may completely fill shallow lake basins, potholes, limestone sinks and sloughs, or they may border open water in such depressions. Vegetation includes cattails, reeds, bulrushes, spikerushes and wild rice. In open areas, pondweeds, naiads, coontail, watermilfoils, waterweeds, duckweed, water lilies, or spatterdocks may occur.

Type 5: Shallow Open Water

Shallow ponds and reservoirs include water depths less than 10 feet deep and fringed by a border of emergent vegetation similar to open areas of Type 4. Vegetation (mainly at water depths less than six feet), includes pondweeds, naiads, wild celery, coontail, watermilfoils, muskgrass, waterlilies, and spatterdocks.

Type 6: Shrub Swamp; Shrub Carr, Alder Thicket

In areas of shrub swamp, shrub carr, and alder thicket, the soil is usually waterlogged during the growing season and is often covered with as much as six inches of water. Shrub swamps occur mostly along sluggish streams and occasionally on floodplains. Vegetation includes alders, willows, buttonbush, dogwoods and swamp-privet.

Type 7: Wooded Swamps; Hardwood Swamp, Coniferous Swamp

In areas of wooded swamps, the soil is waterlogged at least to within a few inches of the surface during the growing season and is often covered with as much as one foot of water. Wooded swamps occur mostly along sluggish streams, on old riverine oxbows, on floodplains, on flat uplands, and in very shallow lake basins. Forest vegetation includes tamarack, arborvitae (cedar), black spruce, balsam fir, red maple, and black ash. Deciduous swamps frequently support beds of duckweeds, smartweeds, and other herbs.

Type 8: Bogs; Coniferous Bogs, Open Bogs

Bogs include soil usually waterlogged and supporting a spongy covering of mosses. Bogs occur mostly in shallow lake basins, on flat uplands and along sluggish streams. Vegetation is woody or herbaceous or both. Typical plants are heath shrubs, sphagnum moss, and sedges.

Type 9: Riverine

Riverine systems (rivers, creeks and streams) are contained in natural or artificial channels periodically or continuously containing flowing water. Upland islands or palustrine wetlands may occur in the channel, but they are not part of the riverine system.

Appendix D: Flora and Fauna

Appendix D – Flora and Fauna

Common Mammal Species to Central Minnesota

| Common Name | Scientific Name | Common Name | Scientific Name |
|--------------------------------|--------------------------------------|--------------------------|---------------------------------|
| Opossum | <i>Didelphis marsupialis</i> | White-footed mouse | <i>Peromyscus leucopus</i> |
| Arctic shrew | <i>Sorex arcticus</i> | Meadow vole | <i>Microtus pennsylvanicus</i> |
| Masked shrew | <i>Sorex cinereus cinereus</i> | Prairie vole | <i>Microtus ochrogaster</i> |
| Northern water shrew | <i>Sorex palustris</i> | Boreal redback vole | <i>Clethrionomys gapperi</i> |
| Pygmy shrew | <i>Sorex hoyi</i> | Muskrat | <i>Ondatra zibethicus</i> |
| Northern short-tailed shrew | <i>Blarina brevicauda</i> | Southern bog lemming | <i>Synaptomys cooperi</i> |
| Eastern mole | <i>Scalopus aquaticus</i> | Norway rat | <i>Rattus norvegicus</i> |
| Star-nosed mole | <i>Condylura cristata</i> | House mouse | <i>Mus musculus</i> |
| Little brown myotis | <i>Myotis lucifugus</i> | Meadow jumping mouse | <i>Zapus budsonius</i> |
| Keen's myotis | <i>Myotis keenii</i> | Woodland jumping mouse | <i>Napaeozapus insignis</i> |
| Silver-haired bat | <i>Lasionycteris noctivagans</i> | Coyote | <i>Canis latrans</i> |
| Eastern pipistrelle | <i>Pipistrellus subflavus</i> | Red fox | <i>Vulpes vulpes</i> |
| Big brown bat | <i>Eptesicus fuscus</i> | Gray fox | <i>Urocyon cinereoargenteus</i> |
| Red bat | <i>Lasiurus borealis</i> | Raccoon | <i>Procyon lotor</i> |
| Hoary bat | <i>Lasiurus cinereus</i> | Least weasel | <i>Mustela nivalis</i> |
| Eastern cottontail | <i>Sylvilagus floridanus</i> | Long-tailed weasel | <i>Mustela frenata</i> |
| Whitetail jackrabbit | <i>Lepus townsendi</i> | Shorttail Weasel | <i>Mustela erminea</i> |
| Eastern chipmunk | <i>Tamias striatus</i> | Mink | <i>Mustela vison</i> |
| Woodchuck | <i>Marmota monax</i> | River Otter | <i>Lutra canadensis</i> |
| Thirteen-lined ground squirrel | <i>Spermophilus tridecemlineatus</i> | Badger | <i>Taxidea taxus</i> |
| Richardson's ground squirrel | <i>Citellus richardsoni</i> | Striped skunk | <i>Mephitis mephitis</i> |
| Gray squirrel | <i>Sciurus carolinensis</i> | Spotted skunk | <i>Spilogale putorius</i> |
| Fox squirrel | <i>Sciurus niger</i> | Bobcat | <i>Lynx rufus</i> |
| Red squirrel | <i>Tamiasciurus hudsonicus</i> | White-tailed deer | <i>Odocoileus virginianus</i> |
| Northern flying squirrel | <i>Glaucomys sabrinus</i> | Mule deer | <i>Odocoileus hemionus</i> |
| Northern grasshopper mouse | <i>Onychomys leucogaster</i> | Southern flying squirrel | <i>Glaucomys volans</i> |
| Western harvest mouse | <i>Reithrodontomys megalotis</i> | Plains pocket gopher | <i>Geomys bursarius</i> |
| Black bear | <i>Ursus americanus</i> | Beaver | <i>Castor canadensis</i> |
| Deer mouse | <i>Peromyscus maniculatus</i> | - | - |

Source: Burt and Grossenheider, 1976.¹

¹ Burt, W. H. and R. P. Grossenheider. 1976. Field guide to the mammals: North America north of Mexico. Houghton Mifflin Company, Boston, Massachusetts.

Common Bird Species to Central Minnesota

| Common Name | Scientific Name | Common Name | Scientific Name |
|---------------------------|----------------------------------|-------------------------|---------------------------------|
| Pied billed grebe | <i>Podilymbus podiceps</i> | Barn swallow | <i>Hirundo rustica</i> |
| Eared grebe | <i>Podiceps nigricollis</i> | Tufted titmouse | <i>Baeolophus bicolor</i> |
| Red -necked grebe | <i>Podiceps grisegena</i> | White-breasted nuthatch | <i>Sitta carolinensis</i> |
| Western grebe | <i>Aechmophorus occidentalis</i> | Wild turkey | <i>Meleagris gallapavo</i> |
| Double crested cormorant | <i>Phalacrocorax auritus</i> | Ruffed grouse | <i>Bonasa umbellus</i> |
| Canada goose | <i>Branta canadensis</i> | Ring necked pheasant | <i>Phasianus colchicus</i> |
| American black duck | <i>Anas rubripes</i> | Gray partridge | <i>Perdix perdix</i> |
| Mallard | <i>Anas platyrhynchos</i> | Red-breasted nuthatch | <i>Sitta canadensis</i> |
| Pintail | <i>Anas acuta</i> | Brown creeper | <i>Certhia americana</i> |
| American wigeon | <i>Anas americana</i> | House wren | <i>Troglodytes aedon</i> |
| Wood duck | <i>Aix sponsa</i> | Carolina wren | <i>Thryothorus ludovicianus</i> |
| Lesser scaup | <i>Aythya affinis</i> | Marsh wren | <i>Cistothorus palustris</i> |
| Redhead | <i>Aythya americana</i> | Sedge wren | <i>Cistothorus platensis</i> |
| Northern shoveler | <i>Anas chrypeata</i> | Golden-crowned kinglet | <i>Regulus satrapa</i> |
| Ruddy duck | <i>Oxyura jamaicensis</i> | Blue-gray gnatcatcher | <i>Poliophtila caerulea</i> |
| Ring-necked duck | <i>Aythya collaris</i> | Brown thrasher | <i>Toxostoma rufum</i> |
| Gadwell | <i>Anas strepera</i> | Gray catbird | <i>Dumetella carolinensis</i> |
| American coot | <i>Fulica americana</i> | Northern mockingbird | <i>Mimus polyglottos</i> |
| Green-winged teal | <i>Anas crecca</i> | Eastern bluebird | <i>Sialia sialis</i> |
| Blue-winged teal | <i>Anas discors</i> | American robin | <i>Turdus migratorius</i> |
| Canvasback | <i>Aythya valisineria</i> | Wood thrush | <i>Hylocichla mustelina</i> |
| Bufflehead | <i>Bucephala albeola</i> | Loggerhead shrike | <i>Lanius ludovicianus</i> |
| Common gallinule | <i>Gallinula chloropus</i> | Cedar waxwing | <i>Bombycilla cedrorum</i> |
| White pelican | <i>Pelecanus erythrorhynchos</i> | Red-eyed vireo | <i>Vireo olivaceus</i> |
| Forster's tern | <i>Sterna forsteri</i> | Warbling vireo | <i>Vireo gilvus</i> |
| Black tern | <i>Chlidonias niger</i> | Yellow throated vireo | <i>Vireo flavifrons</i> |
| Franklin's gull | <i>Larus pipixcan</i> | Black and white warbler | <i>Mniotilta varia</i> |
| Herring gull | <i>Larus argentatus</i> | Cerulean warbler | <i>Dendroica cerulea</i> |
| Ring-billed gull | <i>Larus delawarensis</i> | Chestnut-sided warbler | <i>Dendroica tigrina</i> |
| Great blue heron | <i>Ardea herodias</i> | American redstart | <i>Setophaga ruticilla</i> |
| Black-crowned night heron | <i>Nycticorax nycticorax</i> | Least bittern | <i>Ixobrychus exilis</i> |
| Green heron | <i>Butorides virescens</i> | American bittern | <i>Botaurus lentiginosus</i> |
| Blue-winged warbler | <i>Vermivora pinus</i> | Virginia rail | <i>Rallus limicola</i> |
| Yellow warbler | <i>Dendroica petechia</i> | King rail | <i>Rallus elegans</i> |
| Golden winged warbler | <i>Vermivora chrysoptera</i> | Common yellowthroat | <i>Geothlypis trichas</i> |

| Common Name | Scientific Name | Common Name | Scientific Name |
|---------------------------|--------------------------------------|------------------------|----------------------------------|
| Sora | <i>Porzana carolina</i> | American woodcock | <i>Scolopax minor</i> |
| Killdeer | <i>Charadrius vociferus</i> | Common snipe | <i>Gallinago gallinago</i> |
| Louisiana waterthrush | <i>Seiurus motacilla</i> | Upland sandpiper | <i>Bartramia longicauda</i> |
| Ovenbird | <i>Seiurus aurocapillus</i> | Spotted sandpiper | <i>Actitis macularia</i> |
| Brewer's blackbird | <i>Euphagus cyanocephalus</i> | Wilson's phalarope | <i>Phalaropus tricolor</i> |
| Yellow headed blackbird | <i>Xanthocephalus xanthocephalus</i> | Sharp-shinned hawk | <i>Accipiter striatus</i> |
| Red-winged blackbird | <i>Agelaius phoeniceus</i> | Cooper's hawk | <i>Accipiter cooperii</i> |
| Brown-headed cowbird | <i>Molothrus ater</i> | Northern goshawk | <i>Accipiter gentilis</i> |
| Rusty blackbird | <i>Euphagus carolinus</i> | Northern harrier | <i>Circus cyaneus</i> |
| Common grackle | <i>Quiscalus quiscula</i> | Red-tailed hawk | Red-tailed hawk |
| Bobolink | <i>Dolichonyx oryzivorus</i> | Red-shouldered hawk | <i>Buteo lineatus</i> |
| Eastern meadowlark | <i>Sturnella magna</i> | Swainson's hawk | <i>Buteo swainsoni</i> |
| Western meadowlark | <i>Sturnella neglecta</i> | Rough Legged hawk | <i>Buteo lagopus</i> |
| European starling | <i>Sturnus vulgaris</i> | Broad-winged hawk | <i>Buteo platypterus</i> |
| Orchard oriole | <i>Icterus spurius</i> | Turkey vulture | <i>Cathartes aura</i> |
| Baltimore oriole | <i>Icterus galbula</i> | American kestrel | <i>Falco sparverius</i> |
| Scarlet tanager | <i>Piranga olivacea</i> | Short-eared owl | <i>Asio flammeus</i> |
| House sparrow | <i>Passer domesticus</i> | Eastern screech owl | <i>Megascops asio</i> |
| Dickcissel | <i>Spiza americana</i> | Great horned owl | <i>Bubo virginianus</i> |
| Northern junco | <i>Junco hyemalis</i> | Long-eared owl | <i>Asio otus</i> |
| Northern cardinal | <i>Cardinalis cardinalis</i> | Barred owl | <i>Strix varia</i> |
| American goldfinch | <i>Carduelis tristis</i> | Snowy owl | <i>Nyctea scandiaca</i> |
| Purple finch | <i>Carpodacus purpureus</i> | Burrowing owl | <i>Athene cunicularia</i> |
| Pine siskin | <i>Carduelis pinus</i> | Saw-whet owl | <i>Aegolius acadicus</i> |
| Snow bunting | <i>Plectrophenax nivalis</i> | Mourning dove | <i>Zenaida macroura</i> |
| Indigo bunting | <i>Passerina cyanea</i> | Yellow-billed cuckoo | <i>Coccyzus americanus</i> |
| Rose-breasted grosbeak | <i>Phencticus ludovicianus</i> | Black-billed cuckoo | <i>Coccyzus erythrophthalmus</i> |
| Eastern towhee | <i>Pipilo erythrophthalmus</i> | Common nighthawk | <i>Chordeiles minor</i> |
| White-throated sparrow | <i>Zonotrichia albicollis</i> | Chipping sparrow | <i>Spizella passerina</i> |
| Whip-poor-will | <i>Caprimulgus vociferus</i> | Field sparrow | <i>Spizella pusilla</i> |
| Ruby-throated hummingbird | <i>Archilochus colubris</i> | Swamp sparrow | <i>Melospiza georgiana</i> |
| Belted kingfisher | <i>Ceryle alcyon</i> | American tree sparrow | <i>Spizella arborea</i> |
| Red-headed woodpecker | <i>Melanerpes erythrocephalus</i> | Lark sparrow | <i>Chondestes grammacus</i> |
| Pileated woodpecker | <i>Dryocopus pileatus</i> | Red-bellied woodpecker | <i>Melanerpes carolinus</i> |
| Common flicker | <i>Colaptes auratus</i> | Grasshopper sparrow | <i>Ammodramus savannarum</i> |
| Clay colored sparrow | <i>Spizella pallid</i> | Song sparrow | <i>Melospiza melodia</i> |

| Common Name | Scientific Name | Common Name | Scientific Name |
|--------------------------|---------------------------------|------------------------|-----------------------------------|
| Yellow bellied sapsucker | <i>Sphyrapicus varius</i> | Vesper sparrow | <i>Poocetes gramineus</i> |
| Downy woodpecker | <i>Picoides pubescens</i> | Savannah sparrow | <i>Passerculus sandwichensis</i> |
| Hairy woodpecker | <i>Picoides villosus</i> | Henslow's sparrow | <i>Ammodramus henslowii</i> |
| Eastern kingbird | <i>Tyrannus tyrannus</i> | LeConte's Sparrow | <i>Ammospiza leconteii</i> |
| Western kingbird | <i>Tyrannus verticalis</i> | Tree swallow | <i>Tachycineta bicolor</i> |
| Great crested flycatcher | <i>Myiarchus crinitus</i> | Rough-winged swallow | <i>Stelgidopteryx serripennis</i> |
| Eastern pewee | <i>Contopus virens</i> | Bank swallow | <i>Riparia riparia</i> |
| Eastern phoebe | <i>Sayornis phoebe</i> | Chimney swift | <i>Chaetura pelagica</i> |
| Acadian flycatcher | <i>Empidonax virescens</i> | American crow | <i>Corvus brachyrhynchos</i> |
| Least flycatcher | <i>Empidonax minimus</i> | Blue jay | <i>Cyanocitta cristata</i> |
| Willow flycatcher | <i>Empidonax traillii</i> | American avocet | <i>Recurvirostra Americana</i> |
| Horned lark | <i>Eremophila alpestris</i> | Marbled godwit | <i>Limosa fedoa</i> |
| Purple martin | <i>Progne subis</i> | Black-capped chickadee | <i>Poecile atricapilla</i> |
| Cliff swallow | <i>Petrochelidon pyrrhonota</i> | - | - |

Source: Peterson 1980.²

Common Reptile and Amphibian Species to Central Minnesota

| Common Name | Scientific Name | Common Name | Scientific Name |
|-------------------------|-------------------------------------|------------------------|----------------------------------|
| Blue-spotted salamander | <i>Ambystoma laterale</i> | Northern water snake | <i>Nerodia sipedon</i> |
| Tiger salamander | <i>Ambystoma tigrinum</i> | Smooth green snake | <i>Ophedrys vernalis</i> |
| Mudpuppy | <i>Necturus maculosus</i> | Queen snake | <i>Regina septemvittata</i> |
| Eastern newt | <i>Notophthalmus viridescens</i> | Brown snake | <i>Storeria dekayi</i> |
| American toad | <i>Bufo americanus</i> | Redbelly snake | <i>Storeria occipitomaculata</i> |
| Spring peeper | <i>Pseudacris crucifer</i> | Eastern hognose snake | <i>Heterodon platirhinos</i> |
| Grey treefrog complex | <i>Hyla versicolor- chrysoceles</i> | Western hognose snake | <i>Heterodon nasicus</i> |
| Western chrous frog | <i>Pseudacris triseriata</i> | Plains garter snake | <i>Thamnophis radix</i> |
| Bullfrog | <i>Rana catesbeiana</i> | Common garter snake | <i>Thamnophis sirtalis</i> |
| Green frog | <i>Rana clamitans</i> | Bullsnak | <i>Pituophis catenifer</i> |
| Pickerel frog | <i>Rana palustris</i> | Northern prairie skink | <i>Eumeces septentrionalis</i> |
| Northern leopard frog | <i>Rana pipiens</i> | Snapping turtle | <i>Chelydra serpentina</i> |
| Great Plains toad | <i>Bufo cognatus</i> | Common map turtle | <i>Graptemys geographica</i> |
| Wood frog | <i>Rana sylvatica</i> | Painted turtle | <i>Chrysemys picta</i> |
| Mink frog | <i>Rana septentrionalis</i> | Blanding's turtle | <i>Emydoidea blandingii</i> |
| Canadian toad | <i>Bufo hemiophrys</i> | Spiny shothead | <i>Apalone spinifera</i> |

Source: Tekiela, Stan 2003.³

² Peterson, Roger Tory. 1980. A Field Guide to the Birds – Eastern or Western. Houghton-Mifflin, New York, New York.

³ Tekiela, Stan. 2003. Reptiles & Amphibians of Minnesota Field Guide. Adventure Publications, Cambridge, Minnesota.

Appendix E: Air Monitoring Data

Appendix E – Air Monitoring Data

CO Monitoring, St. Cloud Monitoring Station

| Year | 1-Hour CO | NAAQS/MnAAQS | 8-Hour CO | NAAQS/MnAAQS |
|------|-----------|--------------|-----------|--------------|
| 2005 | 4.0 | 35 | 2.4 | 9 |
| 2006 | 3.3 | | 2.0 | |
| 2007 | 3.1 | | 1.4 | |

Ozone Monitoring, St. Cloud Monitoring Station

| Year | 8-Hour Ozone | 3-Year Average | NAAQS/MnAAQS |
|------|--------------|----------------|--------------|
| 2005 | 0.063 | 0.063 | 0.075/0.08 |
| 2006 | 0.057 | | |
| 2007 | 0.069 | | |

Ozone Monitoring, St. Michael Monitoring Station

| Year | 8-Hour Ozone | 3-Year Average | NAAQS/MnAAQS |
|------|--------------|----------------|--------------|
| 2005 | 0.072 | 0.073 | 0.075/0.08 |
| 2006 | 0.071 | | |
| 2007 | 0.076 | | |

PM 2.5 Monitoring, St. Cloud Monitoring Station

| Year | 24 Hour PM 2.5 | NAAQS/MnAAQS | Annual Mean | NAAQS/MnAAQS |
|------|----------------|--------------|-------------|--------------|
| 2005 | 25.2 | 35/65 | 9.31 | 15.0 |
| 2006 | 17.5 | | 7.86 | |
| 2007 | 20.1 | | 8.32 | |

Appendix F: Letter from the MPCA



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us

March 10, 2009

MAR 13 2009

Bharat Mathur, Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5 (R-19J)
77 West Jackson Boulevard
Chicago, IL 60604

RE: State of Minnesota Recommendation of Attainment Designation for Ozone

Dear Mr. Mathur:

Pursuant to Section 107(d) of the Clean Air Act, and following the revision of the ozone National Ambient Air Quality Standard (NAAQS) on March 12, 2008, the Governor of Minnesota is recommending that the entire state of Minnesota be designated as attainment for the ozone standard. This recommendation does not include areas in the state that are under tribal jurisdiction. Those tribal governments which have met eligibility determination and have submitted a Tribal Implementation Plan to the U.S. Environmental Protection Agency (EPA) may submit designation requests to EPA under the Tribal Authority Rule of 1998 (63 FR 7254).

This designation recommendation is based on three consecutive years (2006-2008) of air sampling data collected at sixteen federal reference monitors around the state. The enclosed summary data provide the fourth highest value at each monitoring site for each year (1997-2008) and three-year calculated averages (1997-1999 through 2006-2008) for each site. No site in the state exceeded the eight-hour standard (0.075 parts per million) for ozone for any three-year period. Quality assured ozone monitoring data for Minnesota has been submitted to the Air Quality System through 2008. The locations of the ozone monitors in the state are identified on the enclosed map.

The Commissioner of the Minnesota Pollution Control Agency is duly authorized by the Governor of the State of Minnesota to submit this letter on behalf of Governor Pawlenty. We anticipate that you will agree with this recommendation for state-wide attainment designation.

If you have questions or comments on this submission, please contact Gordon Andersson of my staff at 651-757-2197.

Sincerely,

Paul Eger
Commissioner

Enclosures

cc: Cheryl Newton, Director, Air and Radiation Division, EPA Region 5
Jay Bortzer, Chief, Air Programs Branch, EPA Region 5
John Mooney, Chief, Criteria Pollutants Section, EPA Region 5
Joshua Gackle, Senior Policy Advisor, Office of Governor Tim Pawlenty

Ozone Concentrations in Minnesota: 1997-2008

| Fourth Highest Daily Maximum 8-hour Average | | | | | | | | | | | | | | | | | |
|---|-------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| | 505 | 2013 | 3051 | 3052 | 3201 | 3204 | 4210 | 5008 | 5302 | 6010 | 6012 | 6015 | 7001 | 7416 | 7550 | Voyageurs | 6018 |
| | 27-139-0505 | 27-005-2013 | 27-095-3051 | 27-145-3052 | 27-171-3201 | 27-035-3204 | 27-083-4210 | 27-109-5008 | 27-049-5302 | 27-003-1002 | 27-003-1001 | 27-163-6015 | 27-075-0005 | 27-017-7416 | 27-137-7550 | 27-137-0034 | 27-037-6018 |
| | Shakopee | Detroit Lakes | Mille Lacs | St. Cloud | St. Michael | Brainerd | Marshall | Rochester | Stanton | Anoka Airport | East Bethel | Stillwater | Ely/Fernberg | Cloquet | Duluth | Ash River | Hastings |
| 1997 | | | | | | | | | | 0.078 | 0.072 | 0.046 | 0.063 | | | 0.071 | 0.070 |
| 1998 | | | | | | | | | | 0.069 | 0.071 | 0.073 | 0.068 | | | 0.067 | 0.071 |
| 1999 | | | 0.078 | | | | | | | 0.074 | 0.073 | 0.077 | 0.068 | | | 0.074 | 0.070 |
| 2000 | | | 0.067 | | | | | | | 0.064 | 0.066 | 0.070 | 0.064 | | | 0.065 | 0.066 |
| 2001 | | | 0.077 | | | | | | | 0.077 | 0.073 | 0.078 | 0.060 | 0.055 | | 0.062 | 0.072 |
| 2002 | 0.069 | | 0.070 | | | | | | | 0.077 | 0.071 | 0.071 | 0.064 | 0.06 | | 0.065 | 0.065 |
| 2003 | 0.068 | | 0.070 | 0.069 | 0.072 | | | 0.066 | 0.076 | 0.070 | 0.071 | 0.073 | 0.06 | 0.066 | | 0.068 | 0.068 |
| 2004 | 0.058 | | 0.061 | 0.055 | 0.062 | | | 0.059 | 0.062 | 0.064 | 0.062 | 0.061 | 0.055 | 0.057 | 0.049 | 0.061 | 0.059 |
| 2005 | 0.073 | 0.066 | 0.073 | 0.063 | 0.072 | 0.069 | 0.068 | 0.074 | 0.072 | 0.07 | 0.077 | 0.072 | 0.067 | 0.065 | 0.06 | 0.07 | |
| 2006 | 0.067 | 0.066 | 0.069 | 0.057 | 0.071 | 0.069 | 0.064 | 0.069 | 0.07 | 0.065 | 0.072 | 0.068 | 0.065 | 0.057 | 0.056 | 0.063 | |
| 2007 | 0.07 | 0.06 | 0.068 | 0.069 | 0.076 | 0.067 | 0.064 | 0.062 | 0.073 | 0.074 | 0.067 | 0.077 | 0.064 | 0.062 | 0.06 | 0.063 | |
| 2008 | 0.06 | 0.059 | 0.058 | 0.055 | 0.059 | 0.062 | 0.06 | 0.062 | 0.063 | 0.057 | 0.058 | 0.063 | 0.058 | 0.056 | 0.056 | 0.059 | |

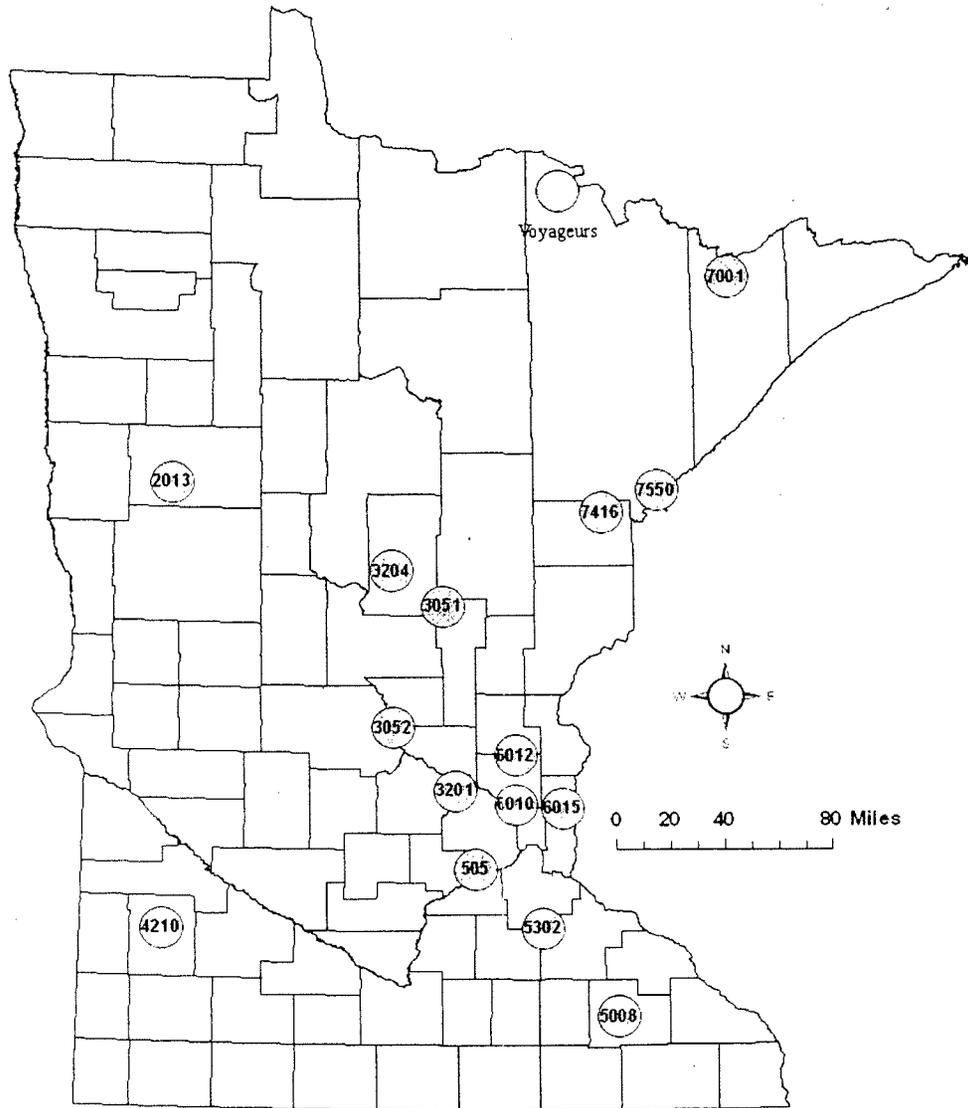
blank cells indicate no data (before site opened or after site closed)

| Three-year Average of the Fourth Highest Daily Maximum 8-hour Average* | | | | | | | | | | | | | | | | | |
|--|----------|---------------|------------|-----------|-------------|----------|----------|-----------|---------|---------------|-------------|------------|--------------|---------|--------|-----------|----------|
| | Shakopee | Detroit Lakes | Mille Lacs | St. Cloud | St. Michael | Brainerd | Marshall | Rochester | Stanton | Anoka Airport | East Bethel | Stillwater | Ely/Fernberg | Cloquet | Duluth | Ash River | Hastings |
| 1997-1999 | | | | | | | | | | 0.072 | 0.072 | 0.065 | 0.066 | | | 0.068 | 0.07 |
| 1998-2000 | | | | | | | | | | 0.068 | 0.07 | 0.074 | 0.067 | | | 0.066 | 0.069 |
| 1999-2001 | | | 0.073 | | | | | | | 0.07 | 0.07 | 0.075 | 0.064 | | | 0.065 | 0.07 |
| 2000-2002 | | | 0.071 | | | | | | | 0.073 | 0.070 | 0.073 | 0.063 | | | 0.064 | 0.068 |
| 2001-2003 | | | 0.072 | | | | | | | 0.075 | 0.072 | 0.074 | 0.061 | 0.060 | | 0.065 | 0.068 |
| 2002-2004 | | | 0.067 | | | | | | | 0.07 | 0.068 | 0.068 | 0.060 | 0.061 | | 0.065 | 0.064 |
| 2003-2005 | 0.066 | | 0.068 | 0.062 | 0.069 | | | 0.066 | 0.070 | 0.068 | 0.070 | 0.069 | 0.061 | 0.063 | | 0.066 | |
| 2004-2006 | 0.066 | | 0.068 | 0.058 | 0.068 | | | 0.067 | 0.068 | 0.066 | 0.07 | 0.067 | 0.062 | 0.06 | 0.055 | 0.065 | |
| 2005-2007 | 0.07 | 0.064 | 0.07 | 0.063 | 0.073 | 0.068 | 0.065 | 0.068 | 0.072 | 0.07 | 0.072 | 0.072 | 0.065 | 0.061 | 0.059 | 0.065 | |
| 2006-2008 | 0.066 | 0.062 | 0.065 | 0.060 | 0.069 | 0.066 | 0.063 | 0.064 | 0.069 | 0.065 | 0.066 | 0.069 | 0.062 | 0.058 | 0.057 | 0.062 | |

blank cells indicate insufficient data (3 years required to determine attainment status)

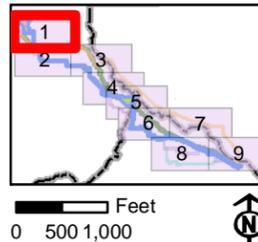
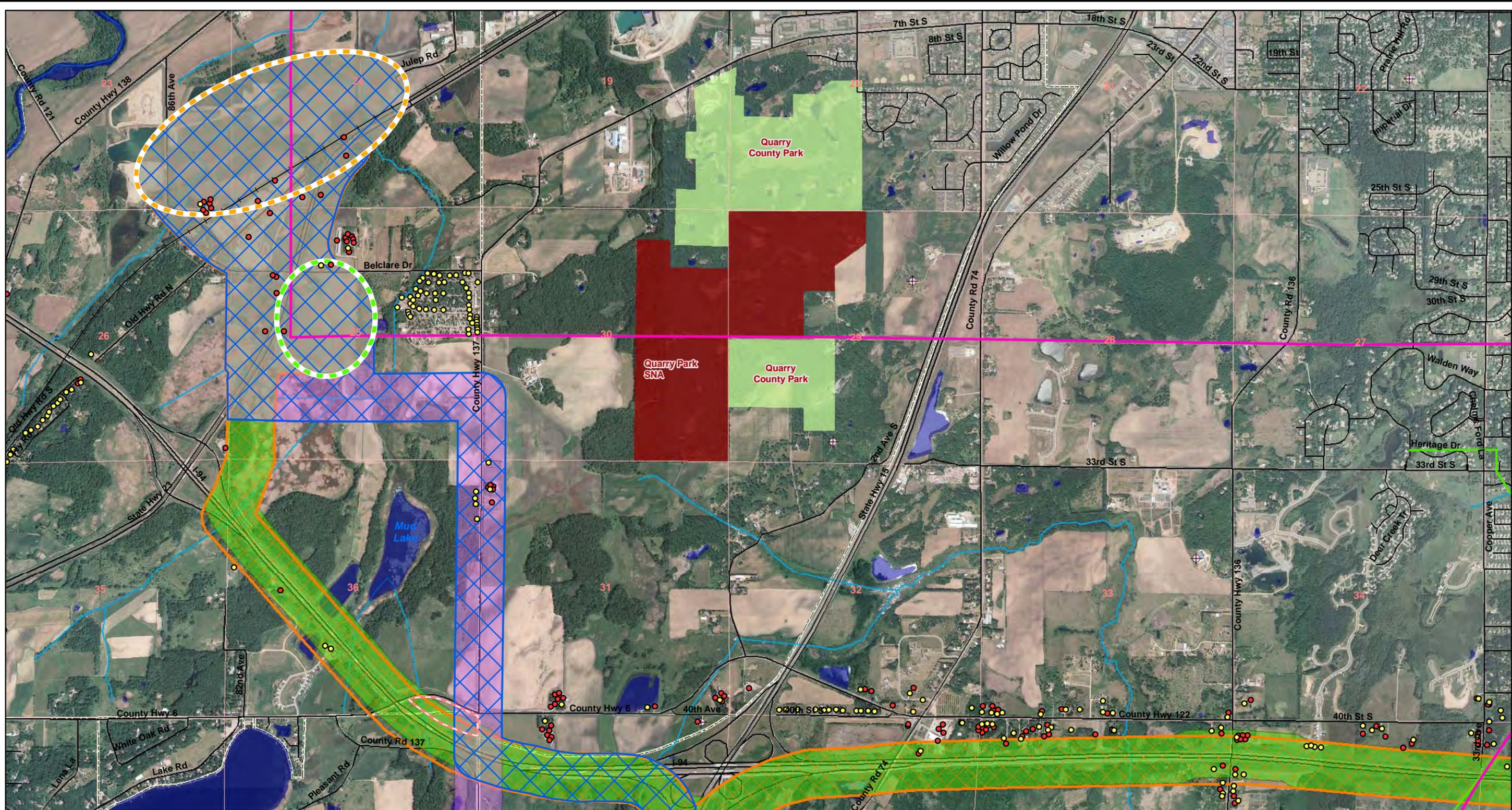
* 3-year average must equal or exceed 0.075 ppm to violate the 8-hour standard

Current Ozone Sites in Minnesota



| Map Site ID | AQS Site ID | Site Name |
|-------------|-------------|---------------|
| 505 | 27-139-0505 | Shakopee |
| 2013 | 27-005-2013 | Detroit Lakes |
| 3051 | 27-095-3051 | Mille Lacs |
| 3052 | 27-145-3052 | St. Cloud |
| 3201 | 27-171-3201 | St. Michael |
| 3204 | 27-035-3204 | Brainerd |
| 4210 | 27-083-4210 | Marshall |
| 5008 | 27-109-5008 | Rochester |
| 5302 | 27-049-5302 | Stanton |
| 6010 | 27-003-1002 | Anoka Airport |
| 6012 | 27-003-1001 | East Bethel |
| 6015 | 27-163-6015 | Stillwater |
| 7001 | 27-075-0005 | Ely/Fernberg |
| 7416 | 27-017-7416 | Cloquet |
| 7550 | 27-137-7550 | Duluth |
| Voyageurs | 27-137-0034 | Ash River |

Appendix G: Detailed Route Maps

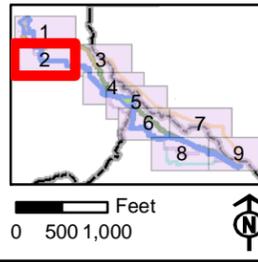
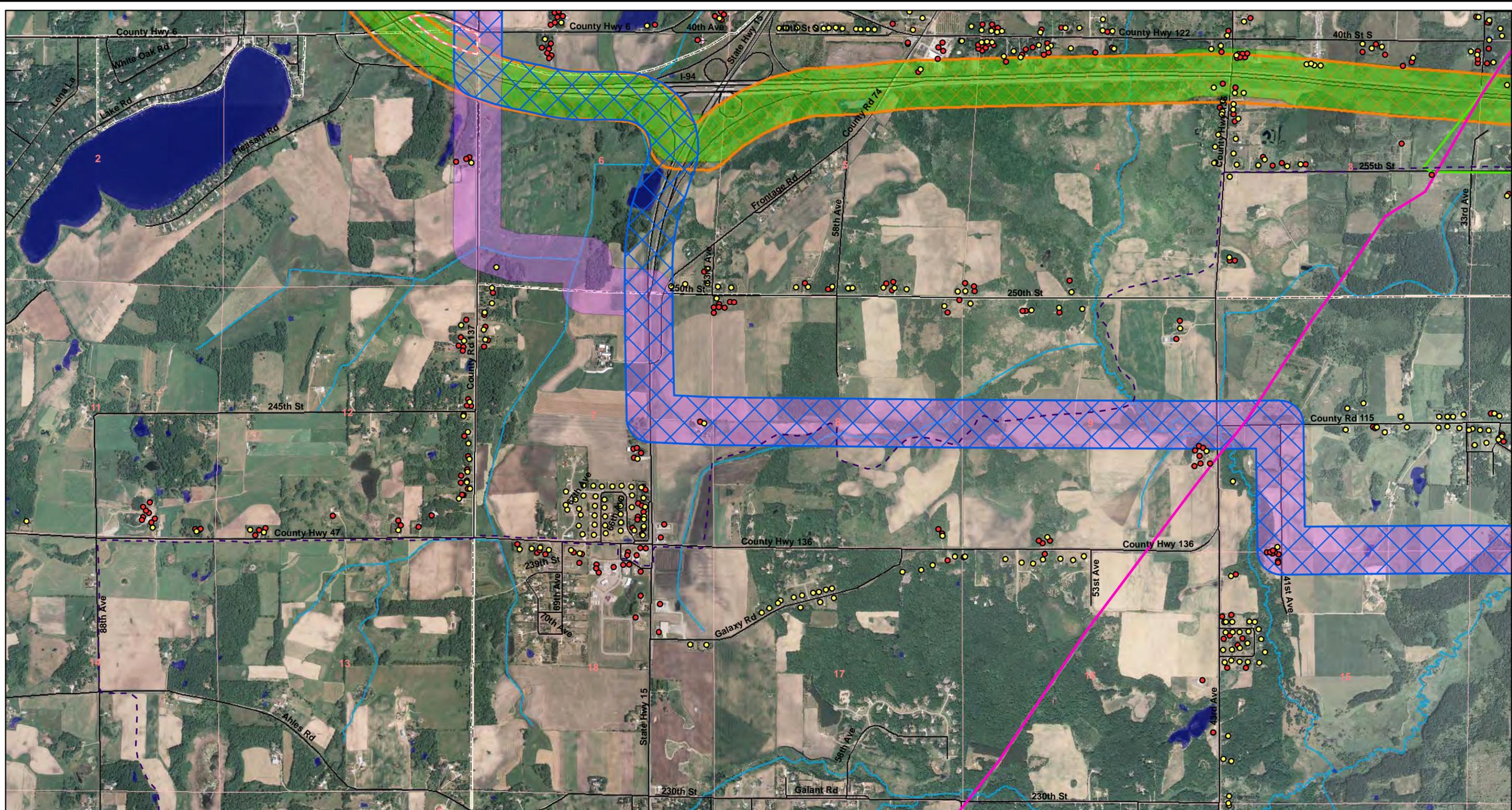


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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
| Quarry Substation Site 2 | Scenic River District | County Park | 115kV AC | Non-Residential Building | Bikeway |
| Quarry Substation Site 3 | DNR 24K Lake | National Wildlife Refuge | 230kV AC | Railroad | |
| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Road | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | Airport | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | | |
| Route C | PLSS Section Line | | FCC Tower | | |
| Route D | BWSR RIM Easement | | Scenic Byway | | |

Appendix G
 Sheet 1 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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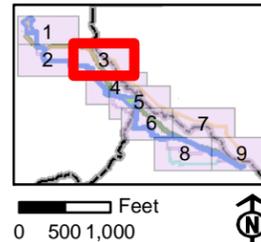
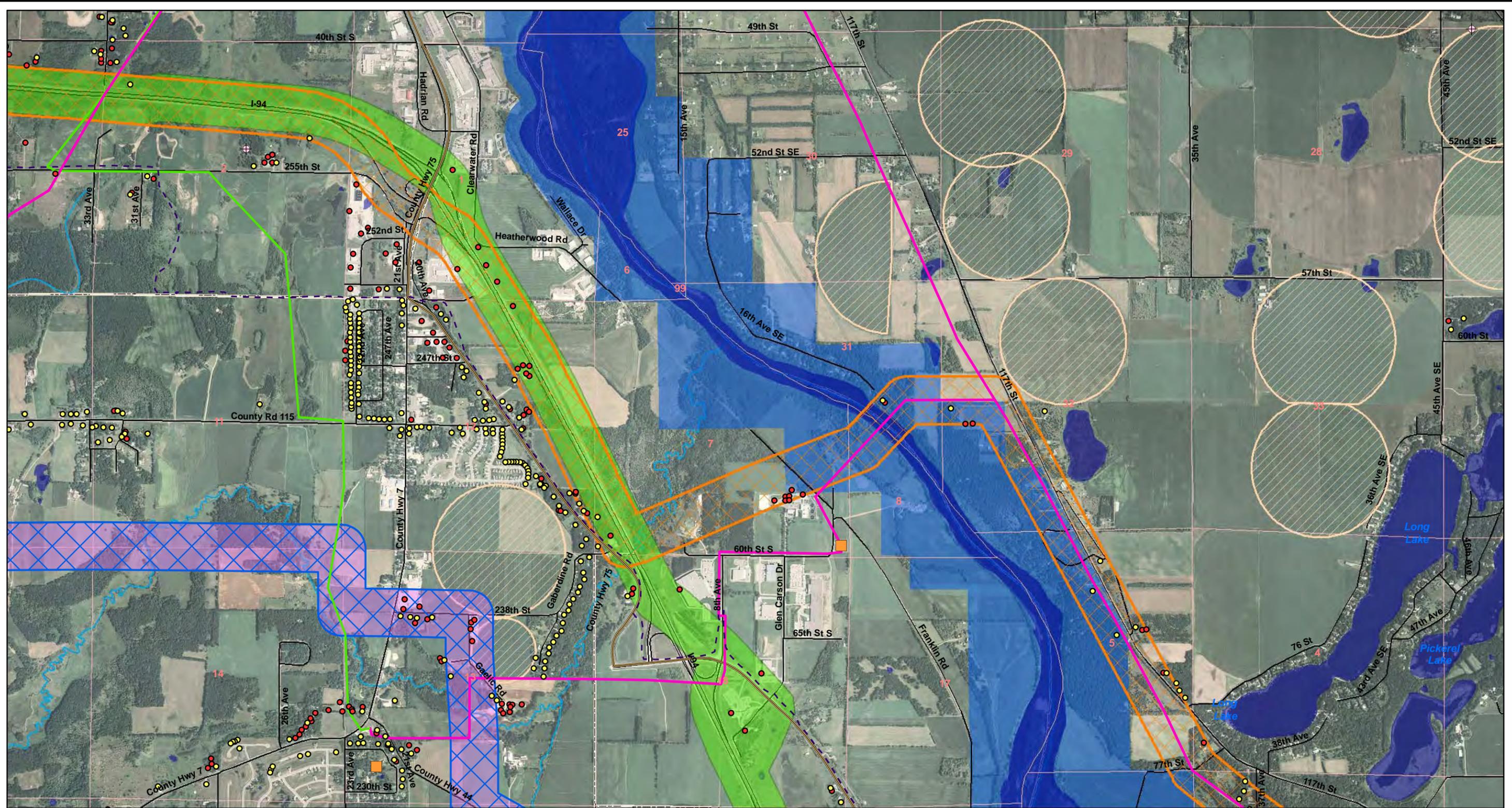


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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
| Quarry Substation Site 2 | Scenic River District | County Park | 115kV AC | Non-Residential Building | Bikeway |
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| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Road | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Pipeline | Airport | |
| Route B | Municipal Boundary | Scientific and Natural Areas | FCC Tower | | |
| Route C | PLSS Section Line | | Scenic Byway | | |
| Route D | BWSR RIM Easement | | | | |

Appendix G
 Sheet 2 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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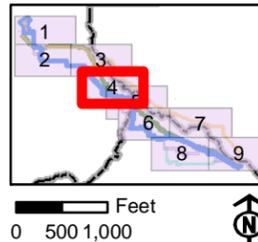
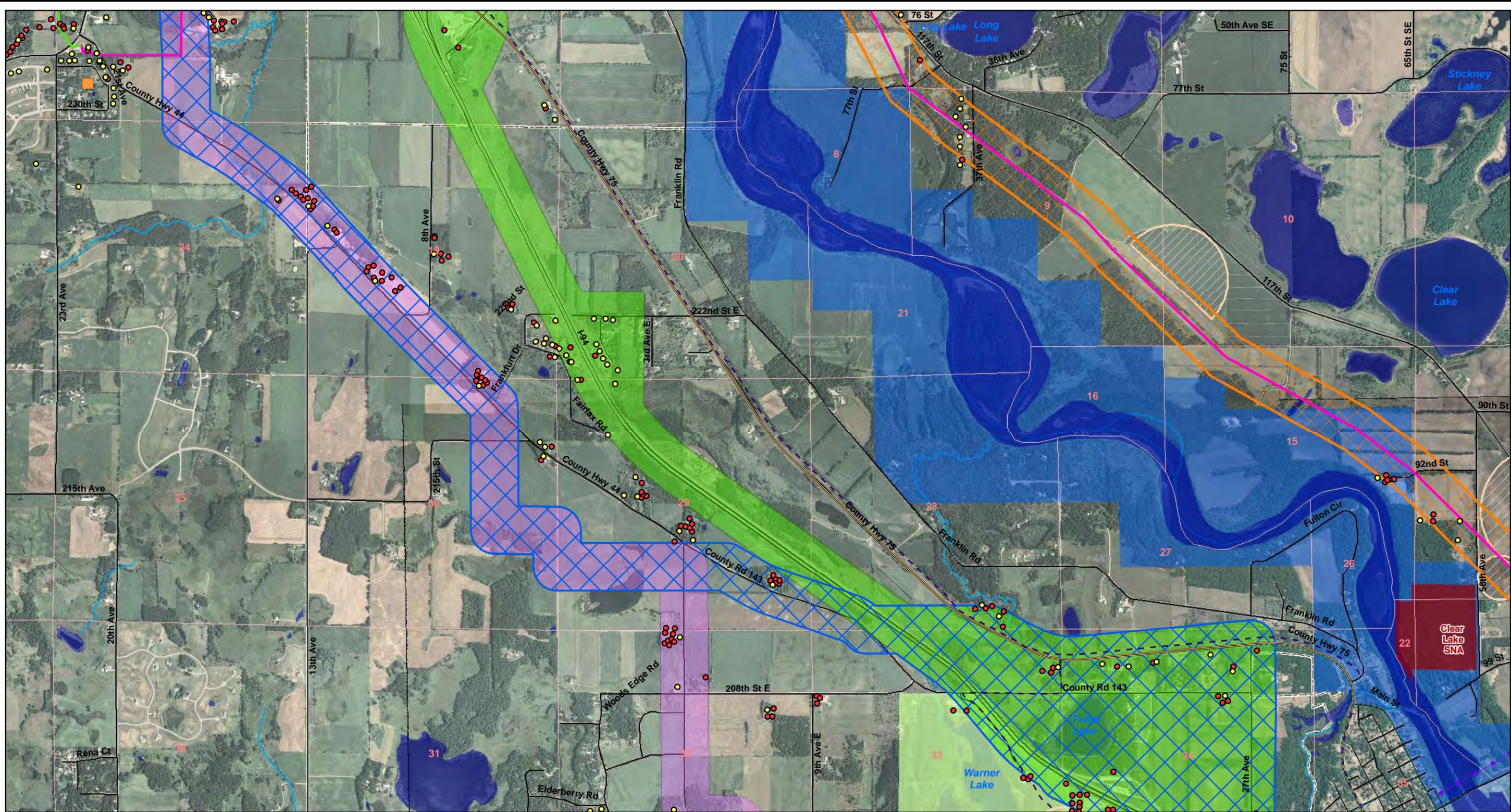
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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
| Quarry Substation Site 2 | Scenic River District | County Park | 115kV AC | Non-Residential Building | Bikeway |
| Quarry Substation Site 3 | DNR 24K Lake | National Wildlife Refuge | 230kV AC | Railroad | |
| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Road | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | Airport | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | | |
| Route C | PLSS Section Line | | FCC Tower | | |
| Route D | BWSR RIM Easement | | Scenic Byway | | |

0 500 1,000 Feet

Appendix G
 Sheet 3 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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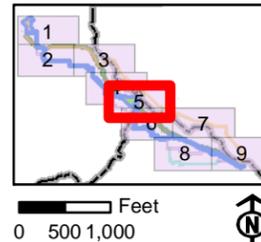
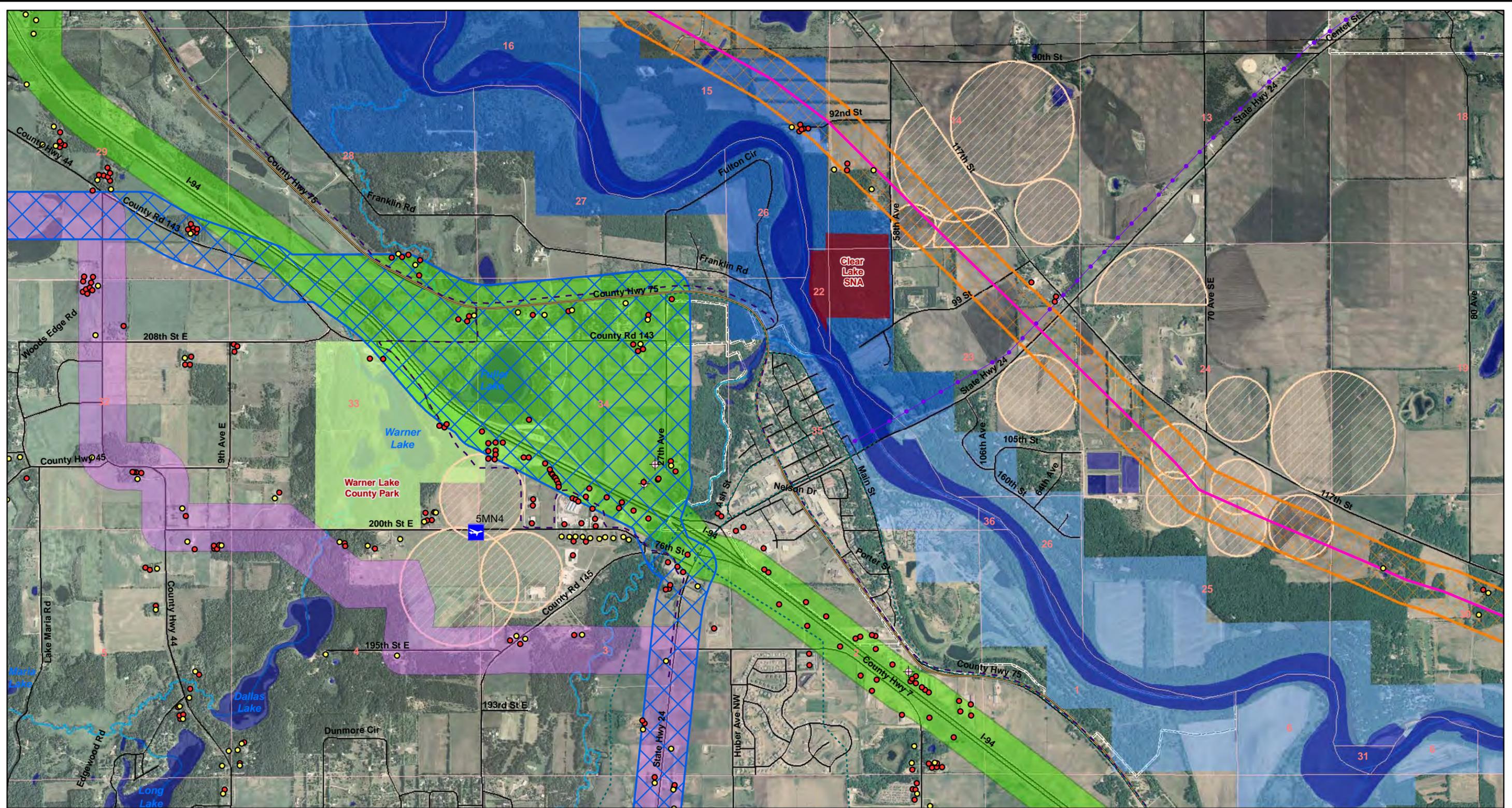
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|--------------------------|-----------------------------|--------------------------------|------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
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| Quarry Substation Site 3 | DNR 24K Lake | National Wildlife Refuge | 230kV AC | Railroad | Road |
| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Airport | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | FCC Tower | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | Scenic Byway | |
| Route C | PLSS Section Line | | | | |
| Route D | BWSR RIM Easement | | | | |

0 500 1,000 Feet

Appendix G
 Sheet 4 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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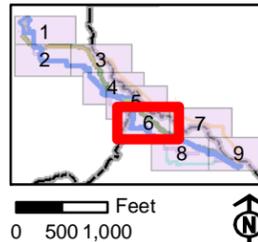
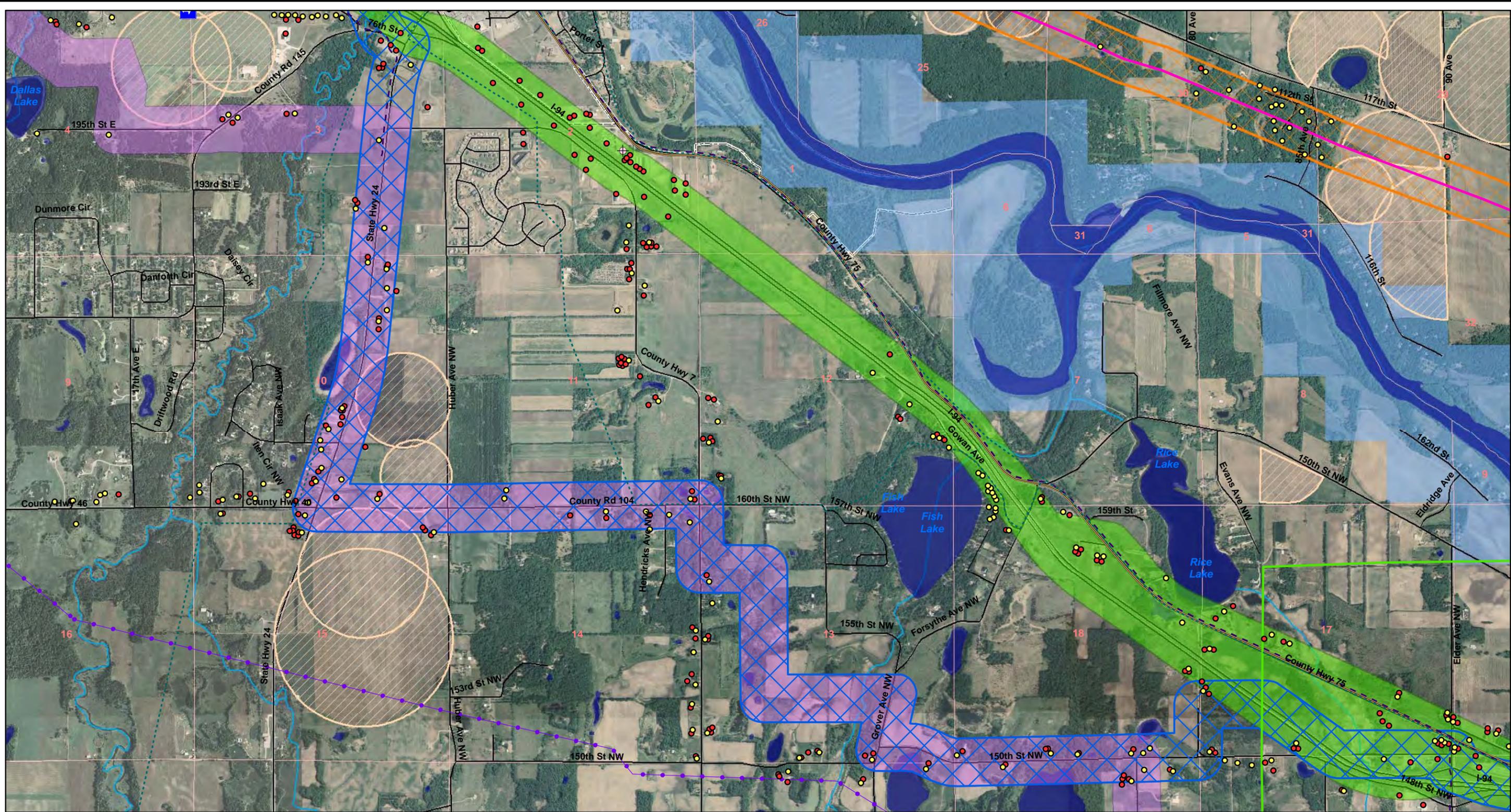


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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
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| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Airport | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | | |
| Route C | PLSS Section Line | | FCC Tower | | |
| Route D | BWSR RIM Easement | | Scenic Byway | | |

Appendix G
 Sheet 5 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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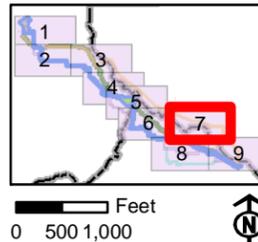
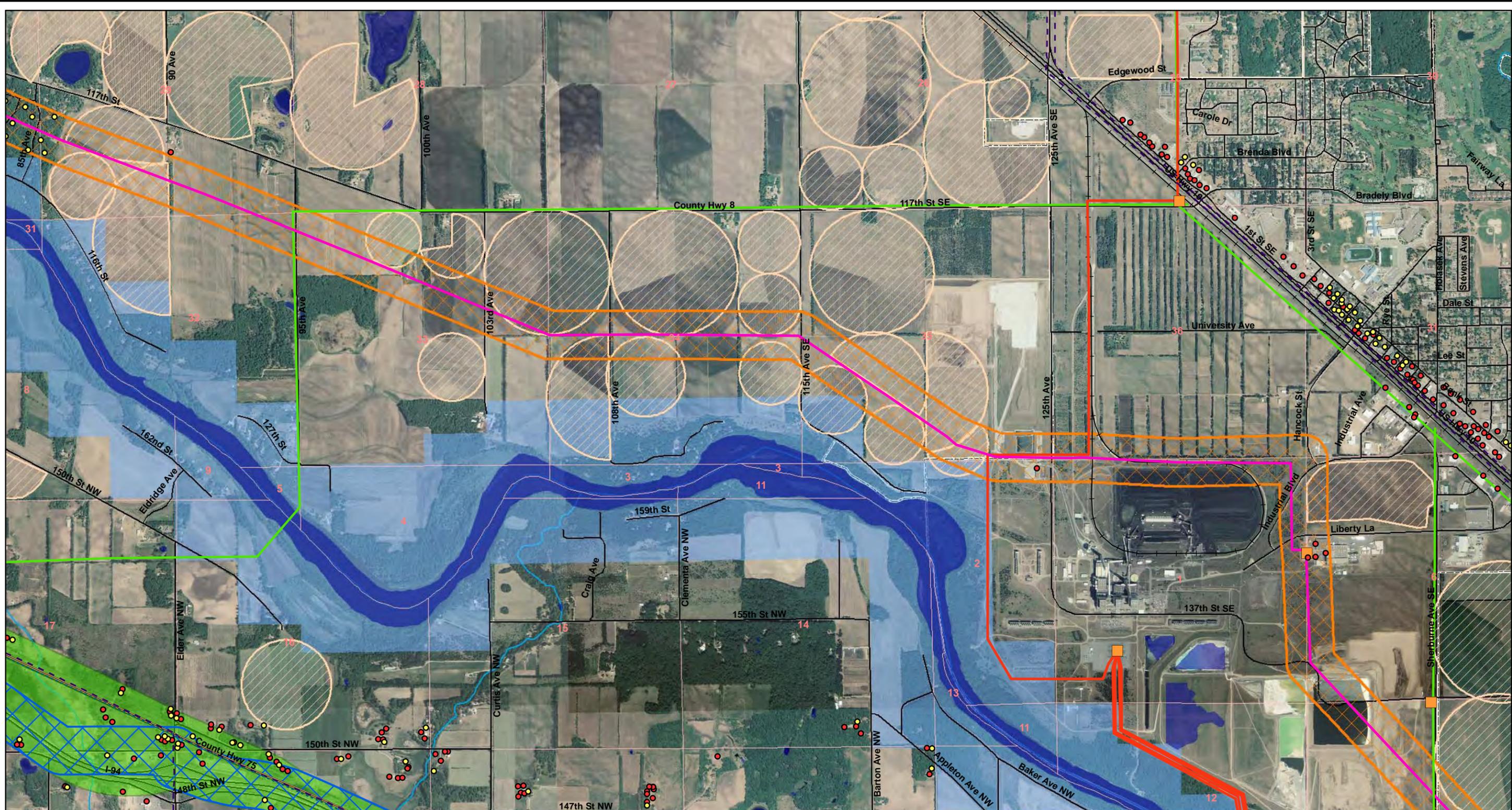


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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
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| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | Airport | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | | |
| Route C | PLSS Section Line | | FCC Tower | | |
| Route D | BWSR RIM Easement | | Scenic Byway | | |

Appendix G
 Sheet 6 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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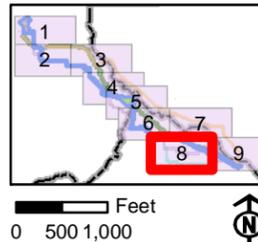
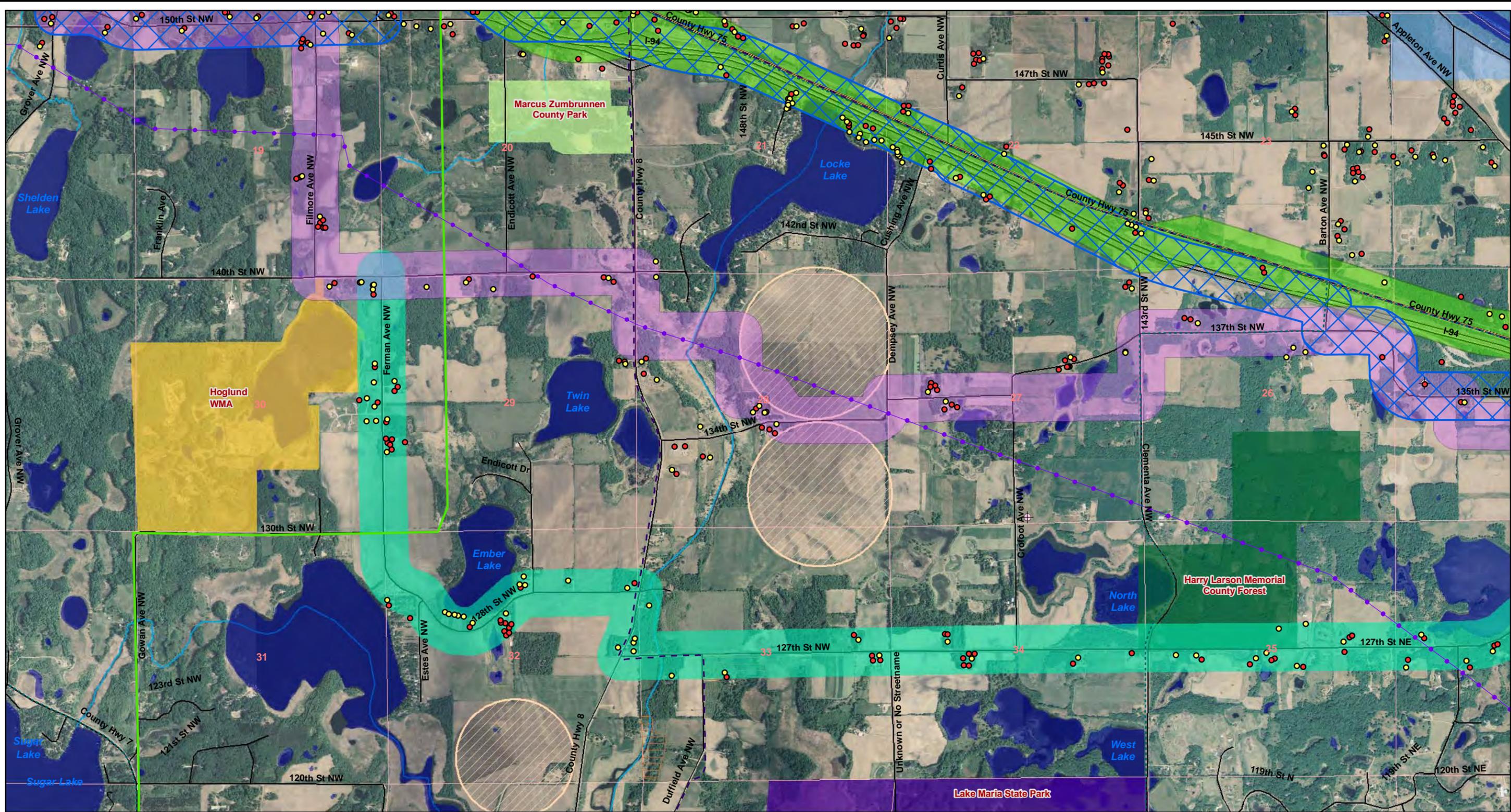


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|--------------------------|-----------------------------|--------------------------------|------------|--------------------------|--------------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
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| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | | |
| Route C | PLSS Section Line | | | | |
| Route D | BWSR RIM Easement | | | | |

Appendix G
 Sheet 7 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



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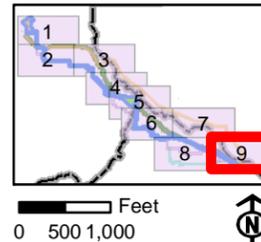
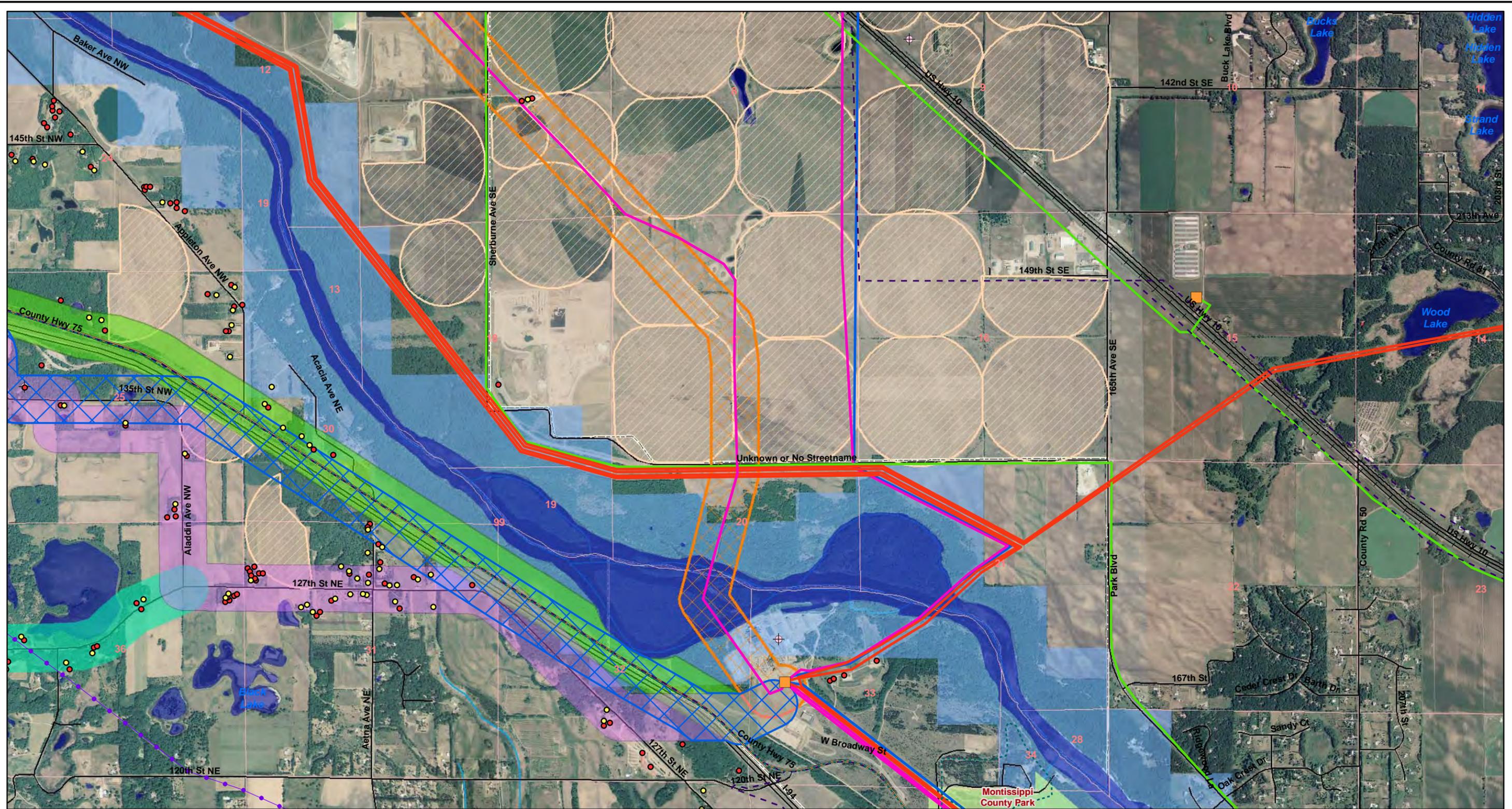


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|---|---|--|---|---|
| <ul style="list-style-type: none"> Quarry Substation Site 1 Quarry Substation Site 2 Quarry Substation Site 3 Preferred Route Route A Route B Route C Route D | <ul style="list-style-type: none"> Recreational River District Scenic River District DNR 24K Lake DNR 24k Stream Center Pivot Irrigation Municipal Boundary PLSS Section Line BWSR RIM Easement | <ul style="list-style-type: none"> County Forest County Park National Wildlife Refuge State Park State Wildlife Management Area Scientific and Natural Areas | <ul style="list-style-type: none"> 69kV AC 115kV AC 230kV AC 345kV AC Pipeline Scenic Byway | <ul style="list-style-type: none"> Residence Non-Residential Building Railroad Road Airport Trail Bikeway FCC Tower |
|---|---|--|---|---|

Appendix G
 Sheet 8 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



Map Document: \\mspe-gis-file\GIS\Proj\MN_DOC\119350\map_docs\DEIS_Figures\Mapbook.mxd 2/24/2009 9:08:24 AM



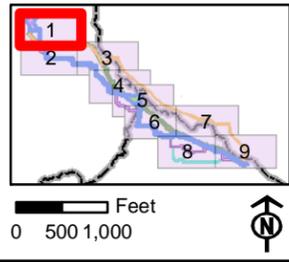
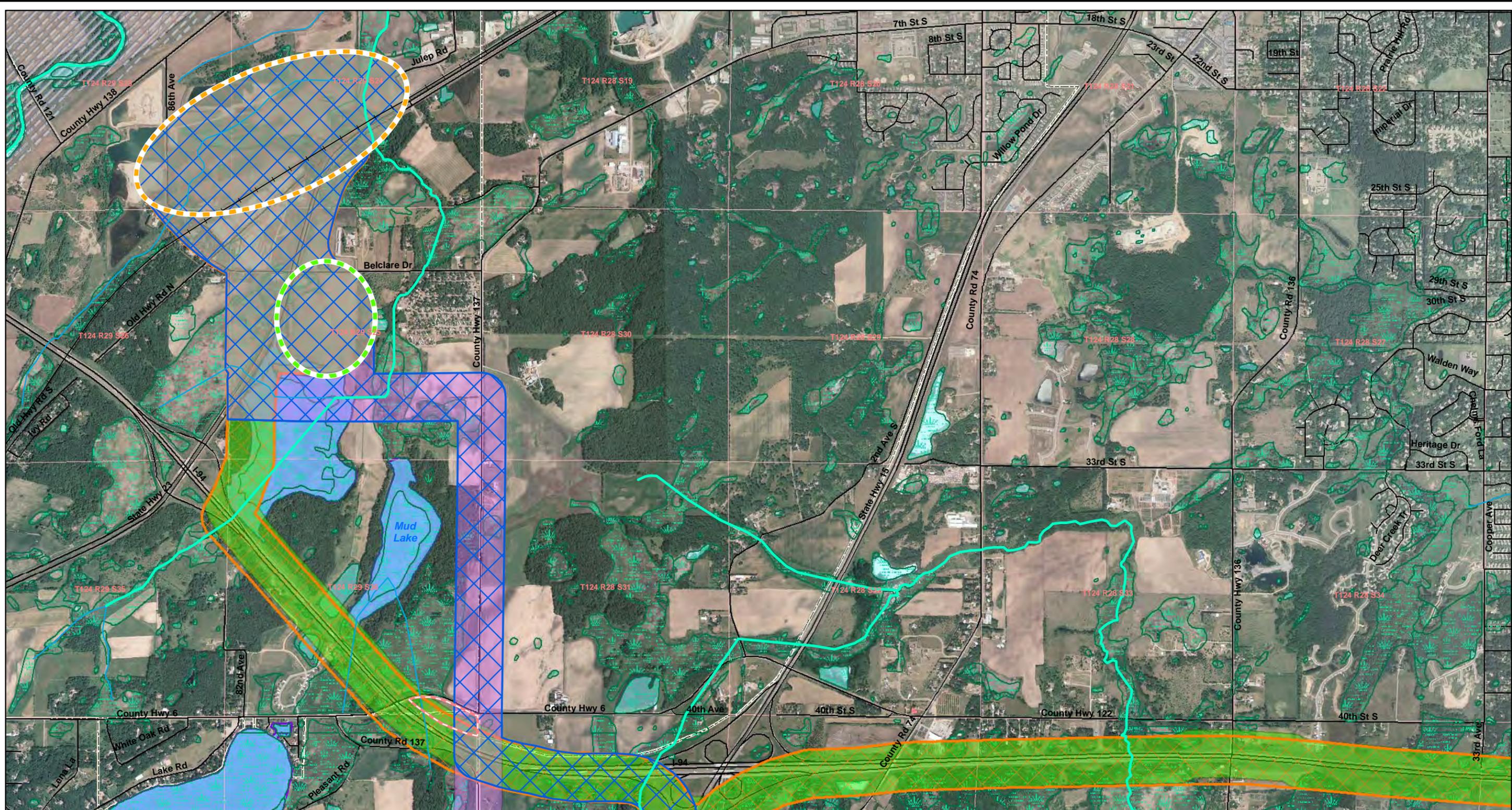
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|--------------------------|-----------------------------|--------------------------------|--------------|--------------------------|---------|
| Quarry Substation Site 1 | Recreational River District | County Forest | 69kV AC | Residence | Trail |
| Quarry Substation Site 2 | Scenic River District | County Park | 115kV AC | Non-Residential Building | Bikeway |
| Quarry Substation Site 3 | DNR 24K Lake | National Wildlife Refuge | 230kV AC | Railroad | |
| Preferred Route | DNR 24k Stream | State Park | 345kV AC | Road | |
| Route A | Center Pivot Irrigation | State Wildlife Management Area | Substation | Airport | |
| Route B | Municipal Boundary | Scientific and Natural Areas | Pipeline | FCC Tower | |
| Route C | PLSS Section Line | | Scenic Byway | | |
| Route D | BWSR RIM Easement | | | | |

Appendix G
 Sheet 9 of 9
 Detailed Route Map
 Monticello to St. Cloud
 345 kV Transmission Line



Map Document: (v:\mspe-gis-file\GISProj\MN_DOC\119350\map_docs\DEIS_Figures\Mapbook.mxd) 2/2/2009 9:08:24 AM

Appendix H: Water Resources Maps

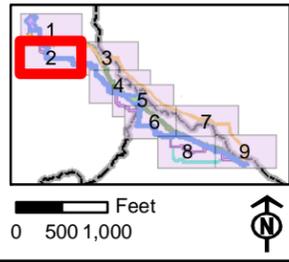
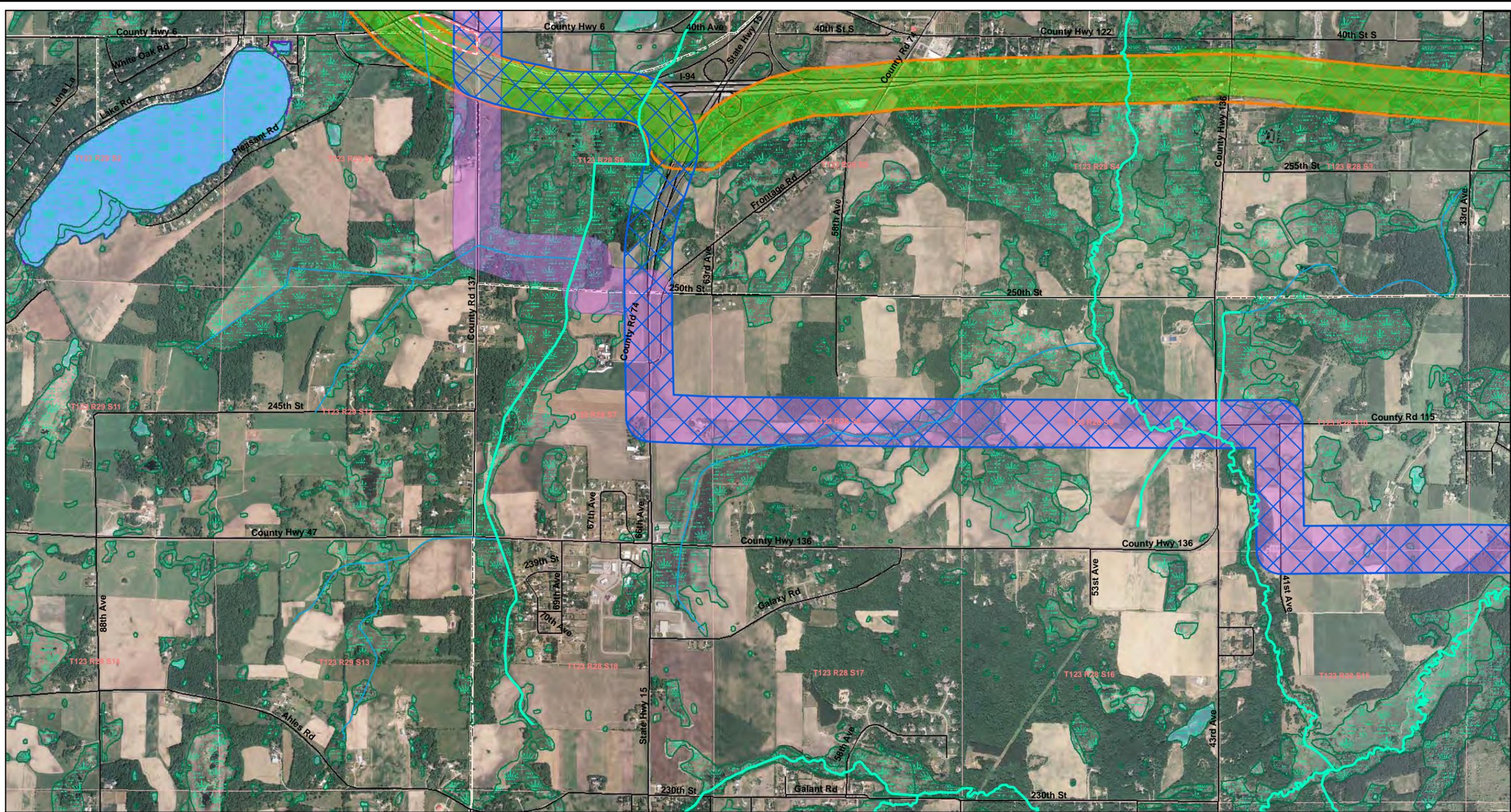


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|--------------------------|----------------------|-----------------|--------------------|
| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24k Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

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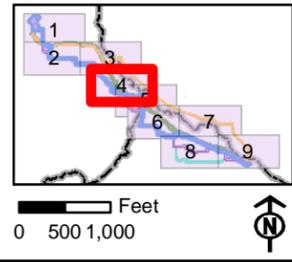
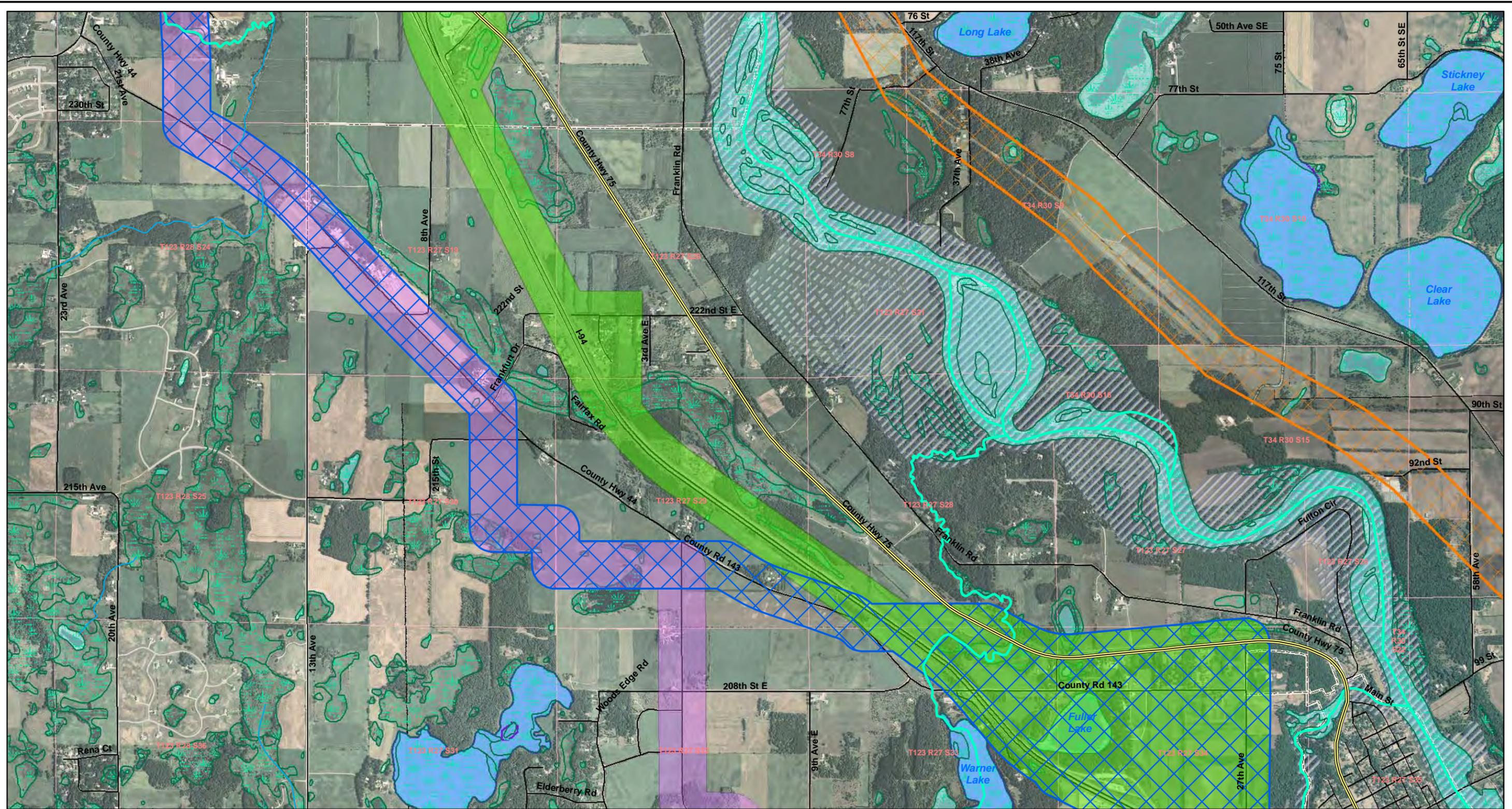
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| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24K Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | Municipal Boundary | |
| Route B | | | |
| Route C | | | |
| Route D | | | |



Appendix H
 Surface Waters
 Sheet 2 of 9
 Monticello to St. Cloud
 345 kV Transmission Line



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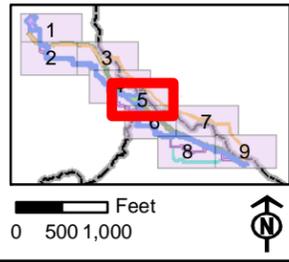
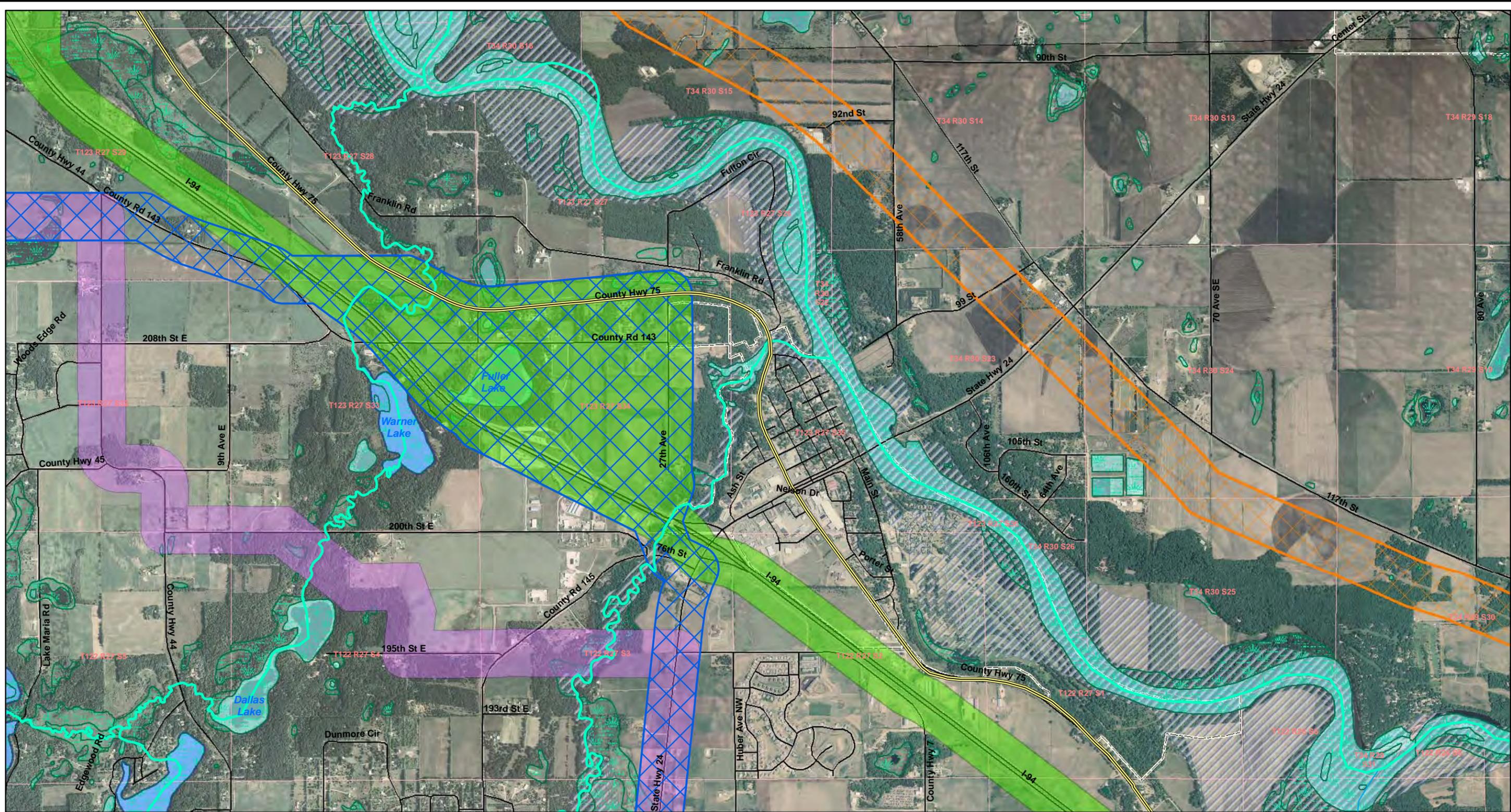


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|--------------------------|----------------------|-----------------|--------------------|
| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24K Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

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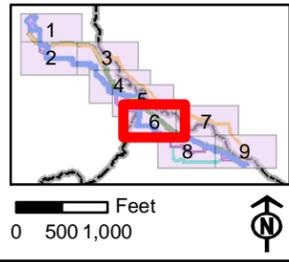
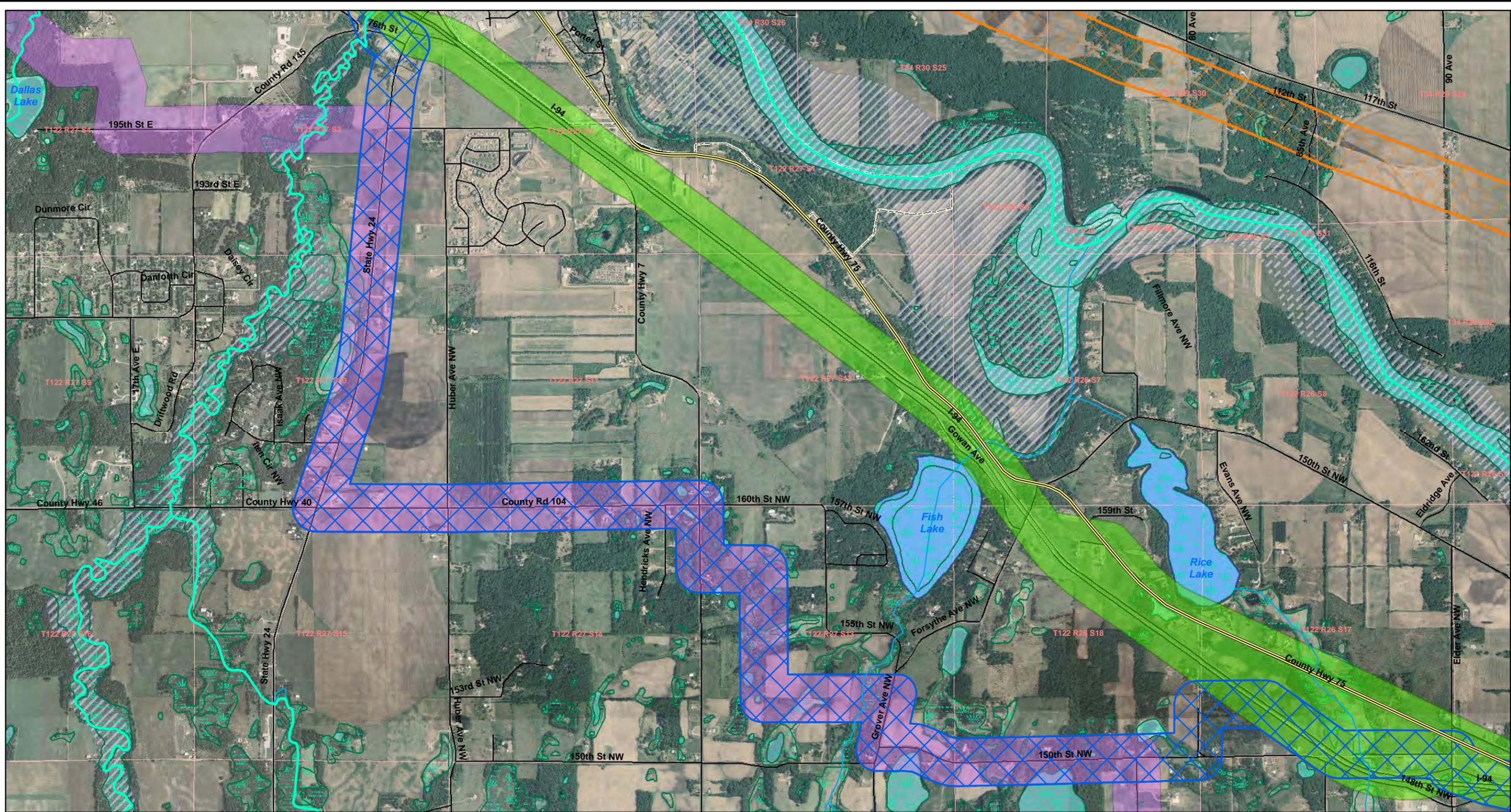


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|--------------------------|----------------------|-----------------|--------------------|
| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24K Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

Appendix H
 Surface Waters
 Sheet 5 of 9
 Monticello to St. Cloud
 345 kV Transmission Line



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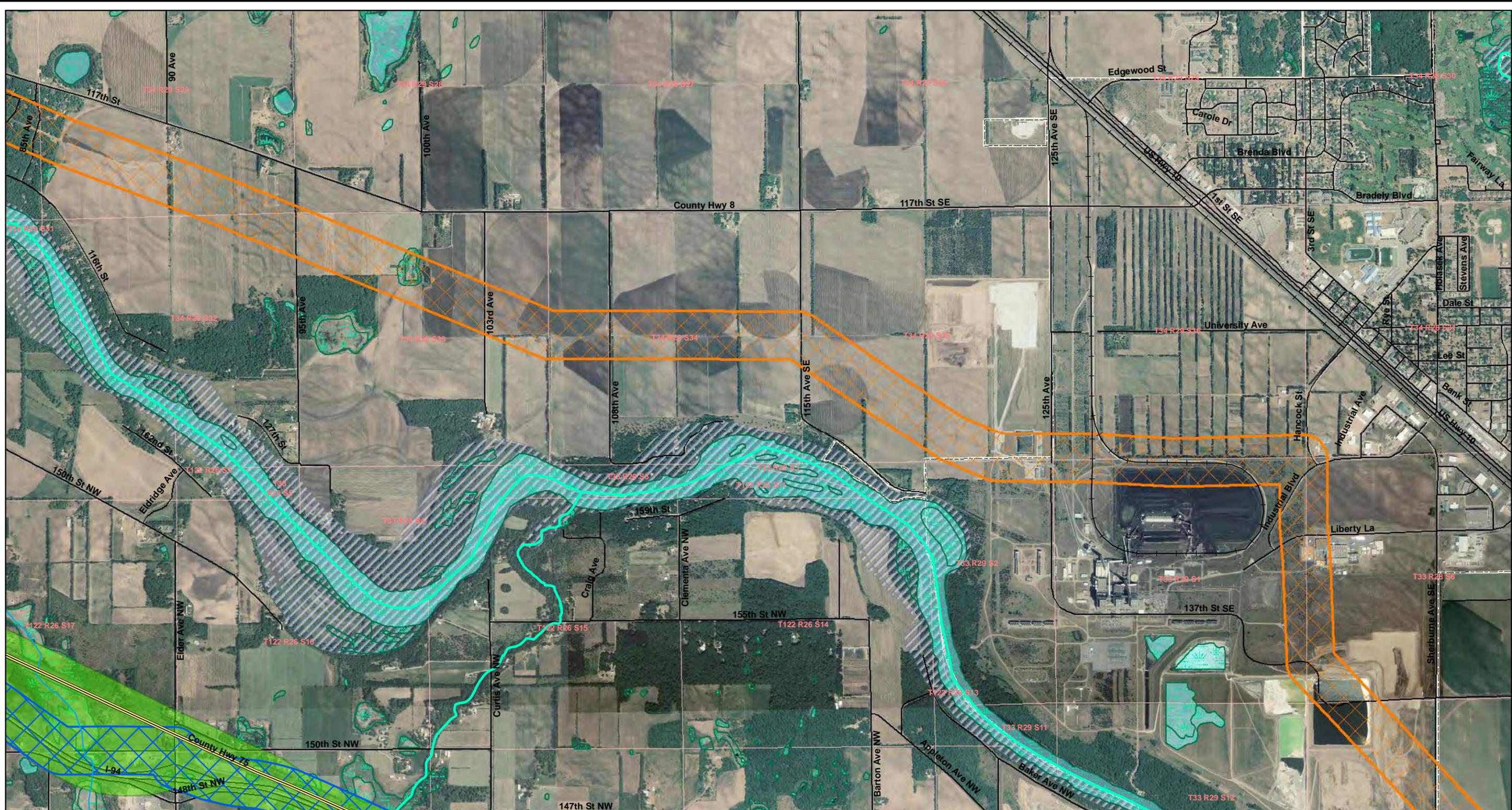


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|--------------------------|----------------------|-----------------|--------------------|
| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24k Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

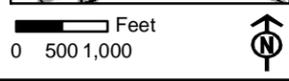
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| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24k Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

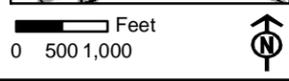
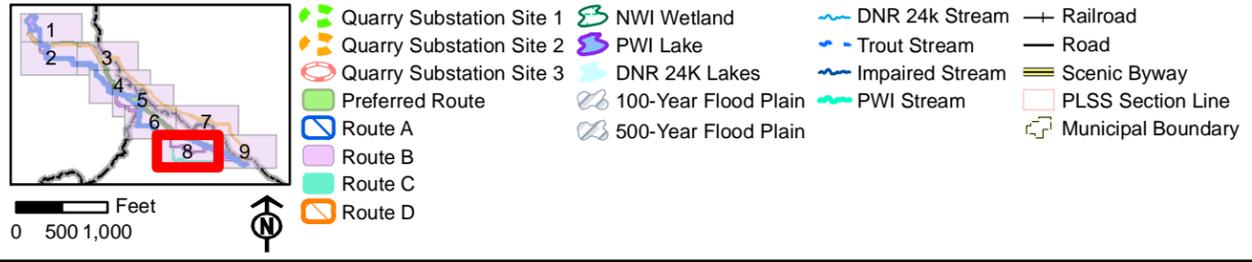
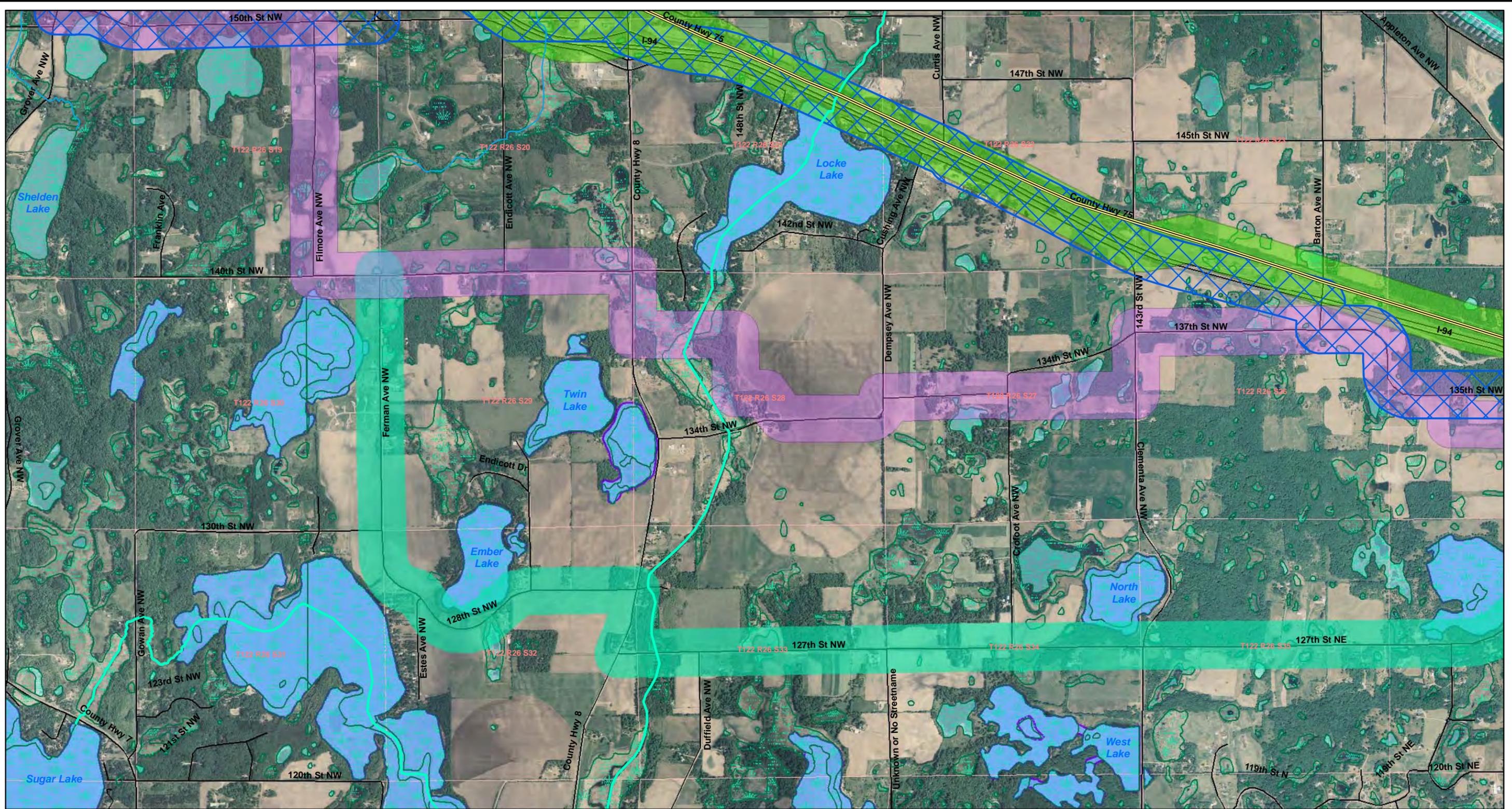


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Appendix H
 Surface Waters
 Sheet 7 of 9
 Monticello to St. Cloud
 345 kV Transmission Line



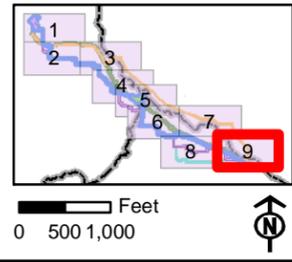
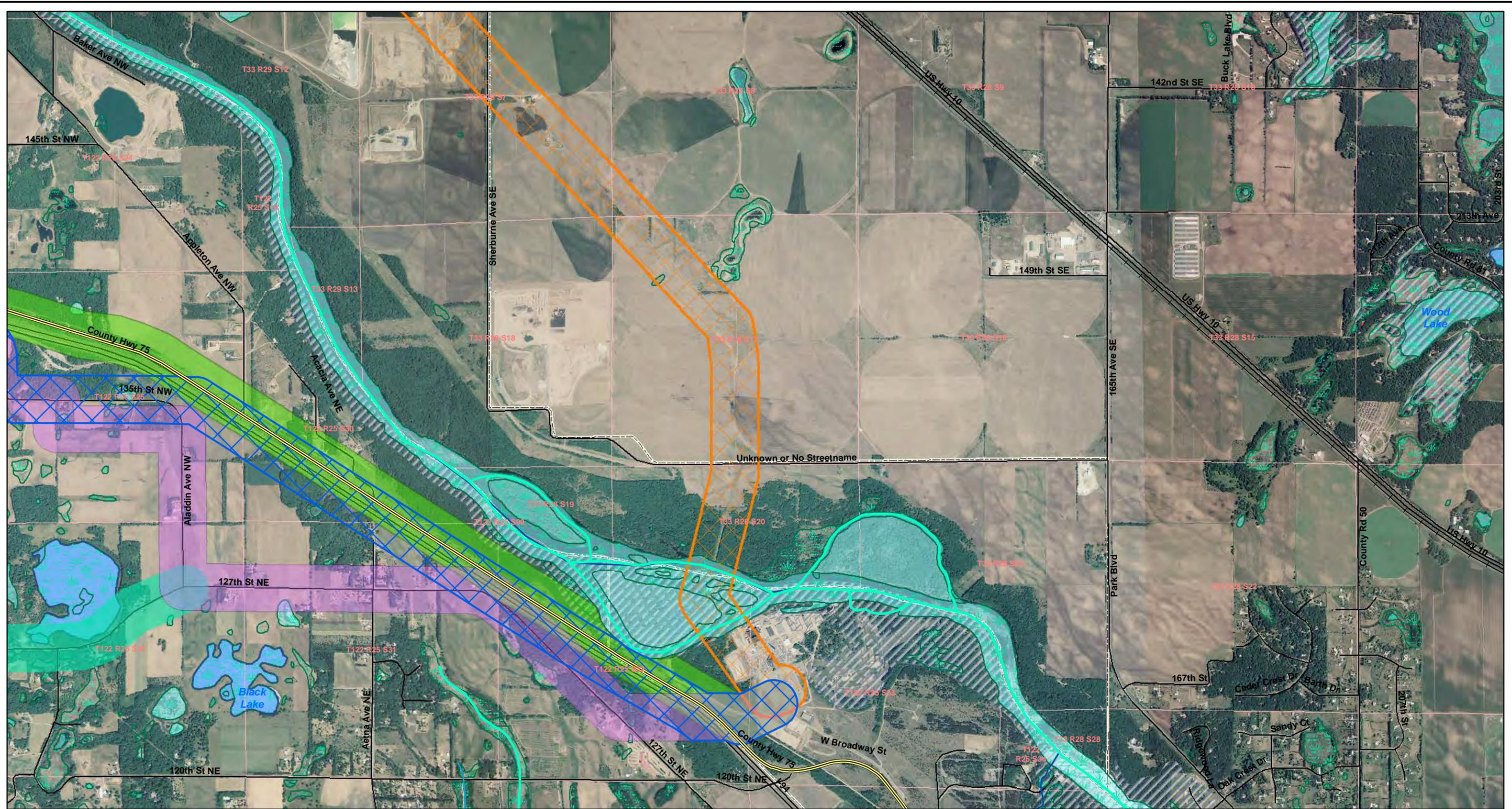
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Appendix H
 Surface Waters
 Sheet 8 of 9
 Monticello to St. Cloud
 345 kV Transmission Line



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|--------------------------|----------------------|-----------------|--------------------|
| Quarry Substation Site 1 | NWI Wetland | DNR 24k Stream | Railroad |
| Quarry Substation Site 2 | PWI Lake | Trout Stream | Road |
| Quarry Substation Site 3 | DNR 24K Lakes | Impaired Stream | Scenic Byway |
| Preferred Route | 100-Year Flood Plain | PWI Stream | PLSS Section Line |
| Route A | 500-Year Flood Plain | | Municipal Boundary |
| Route B | | | |
| Route C | | | |
| Route D | | | |

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Appendix H
 Surface Waters
 Sheet 9 of 9
 Monticello to St. Cloud
 345 kV Transmission Line



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Appendix I: Summary Table

Appendix I – Summary Table

Proposed Routes

| Factor | Applicant Preferred Route | Route A | Route B | Route C | Route D |
|--------------------------------------|--|--|---|---|--|
| Effects on Human Settlement | | | | | |
| Socioeconomic Factors | The construction, operation and maintenance of the transmission lines are not anticipated to negatively impact socioeconomic resources in the Project area. Immediate short-term positive economic gains would likely result from activities associated with the construction of the proposed Project. Long-term beneficial impacts include incremental increases in revenues from utility property tax and landowners would receive compensation for the rights to build, operate and maintain the transmission facilities within the easements area. | | | | |
| Land Use, Zoning and Planning | Approximately 79% of the route is zoned agricultural use, 8% is zoned industrial, 6% is zoned residential, 4% is zoned recreation/park land use, 2% is zoned commercial, 1% is zoned municipal and less than one percent is zoned as special protection agricultural. | Approximately 87% of the route is zoned agricultural, 4% is zoned industrial, 3% is zoned recreation/park, 2% is zoned special protection agriculture, 2% is zoned residential, 1% is zoned as commercial and 1% is zoned as municipal land use. | Similar land usages to Route A. Approximately 88% is zoned agriculture, 4% is zoned industrial, 3% is zoned residential, 2% is zoned recreation/park, 2% is zoned special protection agriculture, and less than 1% is zoned commercial. | Approximately 85% of land is zoned agricultural, 6% of land is zoned residential. Approximately 4% of land is zoned from industrial. 2% is zoned recreation/park, 2% is zoned special protection agriculture, 1% is zoned municipal, and less than 1% is zoned commercial | Approximately 72% of the route is zoned agricultural use, 16% is zoned industrial, 6% is zoned recreation/park 2% is zoned residential, 2% is zoned municipal, 1% is zoned commercial, and less than 1% is zoned special protection agriculture. |
| Displacement | There are 109 residences located within 1,000 feet of the Applicant Preferred Route alignment. The actual 150-foot alignment would be designed to avoid residential displacements. | There are 108 residences located within 1,000 feet of the Route A alignment. The actual 150-foot alignment would be designed to avoid residential displacements. | There are 120 residences located within 1,000 feet of the Route B alignment however; the actual 150-foot alignment would be designed to avoid residential displacements. | There are 147 residences located within 1,000-feet of the Route C however; the ultimate alignment would be designed to avoid all residential displacements. | There are 108 residences located within 1,000 feet of the Route D alignment; however, to the extent feasible, the 150-foot alignment would be designed to avoid residences. |
| Property Values | Based on research conducted, it is not anticipated that the proposed transmission line routes evaluated would significantly affect the value of properties adjacent to the proposed transmission lines. | | | | |
| Aesthetics | Would likely affect visual quality within open landscapes in proximity of the transmission line and would introduce a new land use. | | | | |

| Factor | Applicant Preferred Route | Route A | Route B | Route C | Route D |
|------------------------------|---|---|---|---|--|
| Recreation | Several parks located near this route however, the ultimate location of the proposed transmission line is intended to be outside the designated recreation corridor. Depending on the alignment of the route, approximately 18-19 acres of recreation/open space/park land would be impacted. The route crosses one county trail. | Several parks located near this route however, the ultimate location of the proposed transmission line is intended to be outside the designated recreation corridor. Depending on the alignment of the route, approximately 12-16 acres of recreation/open space/park land would be impacted. The route crosses one county trail. | Several parks located near this route however, the ultimate location of the proposed transmission line is intended to be outside the designated recreation corridor. Depending on the alignment of the route, approximately two acres of recreation/open space/park land would be impacted. The route crosses one county trail. | Several parks located near this route however, the ultimate location of the proposed transmission line is intended to be outside the designated recreation corridor. Depending on the alignment of the route, approximately two acres of recreation/open space/park land would be impacted. The route crosses one county trail. | Few parks near this route. Depending on the specific alignment of this route, approximately no acres of recreation/open space/park land would be impacted. This route would impact one county trail. |
| Transportation | The Preferred Route primarily follows I-94 and Wright County Road 75, a national scenic byway. Construction activities along this route have the potential to impact future roadway projects. | Route A is similar to the Preferred Route however; the amount that it is adjacent to I-94 is about 70%. Transportation related impacts associated with this route are similar to those impacts related to the Preferred Route. | Route B makes use of property lines, cross country segments, and county roads instead of I-94. Transportation related impacts associated with this route are similar to those impacts related to the Preferred Route. | Route C is located on the south side of the Mississippi River and parallels Routes A and B in some areas. This route parallels numerous streets and avenues, County Roads, and State Highways. Construction activities along this route have the potential to impact future roadway projects. | Route D is located on the north side of the Mississippi River and parallels an existing transmission corridor, I-94 and State Highway 23. Transportation related impacts associated with this route are similar to those impacts related to the Preferred Route. |
| Noise | Noise associated with the operation of the proposed 345 kV transmission line is not predicted to exceed the limits identified by the MPCA. | | | | |
| EMF | <p>The proposed HVTL would conform to all applicable local, state, and North American Electric Reliability Corporation (NERC) standards and National Electric Safety Code (NESC) standards regarding clearance to the ground, clearance to crossing utilities, clearance to buildings, strength of materials, and ROW widths.</p> <p>There are no anticipated impacts attributed to EMF from the Project however; three primary methods to reduce EMF exposure for the Project include: avoiding residences to the greatest possible extent, compacting phases, and rearranging phase conductors to cancel EMF.</p> | | | | |
| Wireless technologies | No widespread interference to radio, television, or cellular phones is anticipated. | | | | |

| Factor | Applicant Preferred Route | Route A | Route B | Route C | Route D |
|---|---|---|--|--|--|
| Effects on Land-based Economics | | | | | |
| Agriculture | Approximately 79% of the route is zoned as agricultural use, of which 324 acres are considered prime farmland. Only one center-pivot irrigation system is located within this route. | Approximately 87% of the route is zoned as agricultural use, of which 411 acres are considered prime farmland. There are 5 center-pivot irrigation systems located within this route. | Approximately 88% of the route is zoned as agricultural use, of which 447 acres are considered prime farmland. There are 9 center-point irrigation systems within this route. | Approximately 85% of the route is zoned as agricultural use, of which 450 acres are considered prime farmland. There are 7 center-point irrigation systems within this route. | Approximately 72% of the route is zoned as agricultural use, of which 88 acres are considered prime farmland. There are 36 center-point irrigation systems within this route. |
| Forestry | There are approximately 155 acres of wooded area within in the Preferred Route. | There are approximately 238 acres of wooded area within Route A. | There are approximately 262 acres of wooded area within Route B. | There are approximately 215 acres of wooded area within Route C. | There are approximately 292 acres of wooded area within Route D. |
| Effects on the Natural Environment | | | | | |
| Water Resources | This route would impact approximately 26 acres of State Wild and Scenic River Districts. The route would cross several small or unnamed streams, some of which are PWI streams. There are approximately 27.6 acres of 100-year floodplain designation within the 1000-foot Route. | This route would impact approximately 10 acres of State Wild and Scenic River Districts. The route would cross several small or unnamed streams, some of which are PWI streams. There are approximately 10.7 acres of 100-year floodplain designation within the 1000-foot Route. | This route would impact less than one acre of State Wild and Scenic River Districts. The route would cross several small or unnamed streams, some of which are PWI streams. There are approximately 7.8 acres of 100-year floodplain designation within the 1000-foot Route. | This route would impact less than one acre of State Wild and Scenic River Districts. The route would cross several small or unnamed streams, some of which are PWI streams. There are approximately 0.5 acres of 100-year floodplain designation within the 1000-foot Route. | Approximately 235 acres of the Scenic River District are located within this route of which only 33 acres would be affected. The route would cross several small or unnamed streams, some of which are PWI streams. There are approximately 9.7 acres of 100-year floodplain designation within the 1000-foot Route. |

| Factor | Applicant Preferred Route | Route A | Route B | Route C | Route D |
|---|---|---|--|--|---|
| Wetlands | There are 59 acres of wetlands within the ROW. Of these, 56 would be crossed by the Preferred Route. Approximately 28 would be poles placed within these wetlands. | There are 47 acres of wetlands within the ROW. Approximately 68 wetlands would be crossed by Route A. Approximately 18 to 20 poles would be placed within these wetlands. | There are 57 acres of wetlands within the ROW. Approximately 82 wetlands could be crossed by Route B. Approximately 24 poles would be placed within these wetlands. | There are 50 acres of wetlands within the ROW. Approximately 76 wetlands could be crossed by Route C. Approximately 18 poles would be placed within these wetlands. | There are 35 acres of wetlands within the ROW. Approximately 32 wetlands could be crossed by Route D. Approximately 11 poles would be placed within these wetlands. |
| Flora | Flora throughout most of the Preferred Route is typical of that normally found in an agricultural setting. There are no sections of the route which cross WMAs or NWRs. No habitat would be removed from SNA's, WPAs, or USFWS easements. A total of six MCBS sites of biodiversity significance would be crossed by the route. | Flora throughout most of Route A is typical of that normally found in an agricultural setting. There are no sections of the route which cross WMAs or NWRs. No habitat would be removed from SNA's, WPAs, or USFWS easements. A total of six MCBS sites of biodiversity significance would be crossed by the route. | Flora throughout most of Route B is typical of that normally found in an agricultural setting. Route B does not cross any NWRs however it does include a small section of Hoglund WMA in Wright County. No habitat would be removed from SNAs, WPAs, or USFWS easements. A total of six MCBS sites of biodiversity significance would be crossed by the Route. | The affected environment, impacts to flora, and mitigation measures associated with this route or the same as those described for Route B. A total of six MCBS sites of biodiversity significance would be crossed by the Route. | Flora throughout most of Route D is typical of that normally found in an agricultural setting. There are no sections of the route which cross WMAs or NWRs. No habitat would be removed from SNA's, WPAs, or USFWS easements. A total of eight MCBS sites of biodiversity significance would be crossed by the route. |
| Fauna | There is a potential for temporary displacement of wildlife during construction and for loss of small amounts of habitat. | | | | |
| Air Quality | During construction there would be limited emissions due to exhaust from vehicles and other construction equipment and fugitive dust from ROW clearing. The magnitude of the construction emissions is influenced heavily by the specific construction activity occurring. Adverse impacts to the surrounding environment would be minimal because of the short and intermittent nature of the exhaust emission and dust-producing construction phases. | | | | |
| Effects on Archaeological and Historic Resources | | | | | |

| Factor | Applicant Preferred Route | Route A | Route B | Route C | Route D |
|---|--|--|--|---|---|
| Archaeological & Historic Resources | Four archaeological resources and two historic facilities resources are located within 500 feet of the centerline of the Preferred Route. | Three archaeological resources and four historic facilities resources are located within 500 feet of the centerline of Route A. | Two archaeological resources and two historic facilities resources are located within 500 feet of the centerline of Route B. | No archeological or historic facility resources have been found within 500 feet of the centerline of Route C. | One archaeological resource and no historic facilities have been found within 500 feet of the centerline of Route D. |
| Effects on Rare and Unique Natural Resources | | | | | |
| Rare and Unique Natural Resources | NHIS records show one state-listed threatened species (Blanding's turtle, <i>Emydoidea blandingii</i>) is known to occur within the Preferred Route. Within one miles of the route, the NHIS database showed 10 different species, none of which are federally listed. No critical habitat occurs within one mile of the Preferred Route. | NHIS records show one state-listed threatened species (Blanding's turtle, <i>Emydoidea blandingii</i>) is known to occur within the Preferred Route. Within one miles of the route, the NHIS database showed 11 different species, none of which are federally listed. No critical habitat occurs within one mile of Route A. | NHIS records show 11 different species within one mile of Route B. None of these species are federally listed; one state-listed endangered, three state-listed threatened, and seven species of special concern documented within once mile of Route B. No critical habitat occurs within one mile of Route B. | NHIS records show 12 different species within one mile of Route B. None of these species are federally listed; one state-listed endangered, three state-listed threatened, and eight species of special concern listed within one mile of Route C. No critical habitat occurs within one mile of Route C. | NHIS records show 15 different species within one mile of Route B. None of these species are federally listed; one state-listed endangered, four state-listed threatened, and nine species of special concern listed within one mile of Route D. One critical nesting area occurs within one mile of Route D. |
| Project Information | | | | | |
| Cost | \$54,200,000 | \$65,400,000 | \$71,500,000 | \$65,500,000 | \$60,2000,000 |
| Length of Transmission | 28 miles | 32 miles | 35 miles | 30 miles | 30 miles |

Proposed Substations & Interconnect

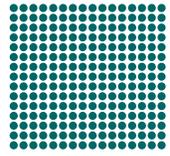
| Factor | Quarry Substation Site 1 | Quarry Substation Site 2 | Quarry Substation Site 3 with 115 kV Interconnect |
|--------------------------------------|--|---|---|
| Effects on Human Settlement | | | |
| Socioeconomic Factors | The construction, operation and maintenance of the transmission lines and substations are not anticipated to negatively impact socioeconomic resources in the Project area. Immediate short-term positive economic gains would likely result from activities associated with the construction of the proposed Project. Long-term beneficial impacts include incremental increases in revenues from utility property tax and landowners would receive compensation for the rights to build, operate and maintain the transmission facilities within the easements area. | | |
| Land Use, Zoning and Planning | Approximately 99.8% of the route is zoned agricultural use and less than one-half of one percent is zoned for residential and reflects one existing residence located there. | Approximately 80% of the route is zoned agricultural use and approximately 20% is zoned for residential. | Approximately 54% of the route is zoned agricultural use, 23% is zoned special protection agriculture, 14% is zoned municipal, 8% is zoned recreation/park, and 1% is zoned residential. There are no areas of commercial or industrial land uses within this substation site or interconnect. |
| Displacement | There is one existing residence and 2 non residential buildings located within this siting area. The substation would ultimately be sited to avoid the displacement of these structures. | There is one existing residence and 10 non residential buildings located within this siting area. The substation would ultimately be sited to avoid the displacement of these structures. | There are no residences or commercial buildings located within the Quarry Substation Site 3. Within the 115 kV Interconnect there are 8 residences and 8 nonresidential structures, respectively. There are no residences located within 75 feet of the 115 kV Interconnect. No displacement impacts would occur. |
| Property Values | Based on research conducted, it is not anticipated that the proposed transmission line routes evaluated would significantly affect the value of properties adjacent to the proposed transmission lines. | | |

| Factor | Quarry Substation Site 1 | Quarry Substation Site 2 | Quarry Substation Site 3 with 115 kV Interconnect |
|-----------------------|---|---|--|
| Aesthetics | The surrounding land use for Substation Site 1 is generally agricultural and industrial so the substation would not significantly impact the viewshed. Site 1 is located approximately 1,000 feet west of an existing residential use area; however, a tree line occurs between the siting area and the residential area. | The surrounding land use for Substation Site 1 is generally agricultural and industrial so the substation would not significantly impact the viewshed. | The Quarry Substation Site 3 is located in a primarily agricultural setting and would be visible from I-94; however, this intrusion would be considered having a low visual sensitivity. |
| Recreation | No impacts to parks are anticipated as a result of the construction of the proposed Quarry Substation Site 1. No impacts to trails are anticipated. | No impacts to parks are anticipated as a result of the construction of the proposed Quarry Substation Site 2. No impacts to trails are anticipated. | No impacts on parks are anticipated as a result of the construction of the proposed Quarry Substation Site 3 with 115 kV Interconnect. The 115 kV Interconnect travels within one mile of the Stearns County Park; Quarry Park (which is adjacent to Quarry Park SNA.) No impacts to trails are anticipated. |
| Transportation | Up to 40 acres would be acquired for the Quarry Substation Site 1. No impacts to existing transportation corridors are anticipated. Additional roadways/driveways would need to be constructed to provide access to the site. | Up to 40 acres would be acquired for the Quarry Substation Site 2. No impacts to existing transportation corridors are anticipated. Additional roadways/driveways would need to be constructed to provide access to the site. | The Quarry Substation Site 3 covers approximately 13 acres and is bounded by CSAH 6 and I-94. No impacts to existing transportation corridors are anticipated. Additional roadways/driveways would need to be constructed to provide access to the site. |
| Noise | Noise associated with Quarry Substation Sites 1, 2, and 3 include the operation of transformers and switchgear. Quarry Substation Site 3 includes only the operation of a switchgear. Due to the infrequent operation of the switchgear, the noise generated would be considered temporary in nature and not predicted to exceed the MPCA Noise Limits. | | |

| Factor | Quarry Substation Site 1 | Quarry Substation Site 2 | Quarry Substation Site 3 with 115 kV Interconnect |
|---|---|---|---|
| EMF | <p>The proposed HVTL would conform to all applicable local, state, and North American Electric Reliability Corporation (NERC) standards and National Electric Safety Code (NESC) standards regarding clearance to the ground, clearance to crossing utilities, clearance to buildings, strength of materials, and ROW widths.</p> <p>There are no anticipated impacts attributed to EMF from the Project however; three primary methods to reduce EMF exposure for the Project include: avoiding residences to the greatest possible extent, compacting phases, and rearranging phase conductors to cancel EMF.</p> | | |
| Wireless technologies | <p>No widespread interference to radio, television, or cellular phones is anticipated.</p> | | |
| Effects on Land-based Economics | | | |
| Agriculture | <p>No prime farmland within siting area however; Quarry Substation Site 1 would have permanent impacts on agricultural land because a minimum of six acres would be removed from existing land use. There are no center pivot irrigation systems within the proposed siting area.</p> | <p>No prime farmland within siting area however; Quarry Substation Site 1 would have permanent impacts on agricultural land because a minimum of six acres would be removed from existing land use. There are no center pivot irrigation systems within the proposed siting area.</p> | <p>Quarry Substation Site 3 would be up to 15 acres in size, in which six acres would be permanently removed from existing land use which includes soils designated for prime farmland. This substation site would impact approximately 12.96 acres if agricultural lands classified as grasslands and cropland land cover and would impact approximately 2.42 acres of agricultural land classified as prime farmland soil. There are no center point irrigation systems within the proposed 115 kV Interconnect or substation site.</p> |
| Forestry | <p>No areas of commercial forestry within one mile of any of the proposed substation sites.</p> | | |
| Effects on the Natural Environment | | | |

| Factor | Quarry Substation Site 1 | Quarry Substation Site 2 | Quarry Substation Site 3 with 115 kV Interconnect |
|------------------------|---|--|---|
| Water Resources | No impacts to scenic waterways are anticipated as a result of the construction of this Substation. This site does not cross any waterbodies. Impacts are not expected. There are no occurrences of 100-year floodplain acres within Quarry Substation Site 1. | No impacts to scenic waterways are anticipated as a result of the construction of this Substation. There are no major named surface waters within this siting area. Several small and/or unnamed streams occur within the Quarry Substation Site 2, resulting in two crossings. There are no occurrences of 100-year floodplain acres within Quarry Substation Site 2. | No impacts to scenic waterways are anticipated as a result of the construction of this Substation or the 115 kV Interconnect here are no major named surface waters within this siting area. A small, unnamed stream occurs within the Quarry Substation 3 Siting Area, resulting in one crossing. There are no occurrences of 100-year floodplain acres within the Quarry Substation Site 3 and 115 kV Interconnect. |
| Wetlands | This siting area contains NWI wetlands. | This siting area contains NWI wetlands. | The 115 kV Interconnect includes between 21 and 65 acres of wetlands within the three Route alignment options. Of these, approximately 11-58 wetlands would be crossed. Between 8 and 30 poles would be placed within these wetlands, depending on alignment. |
| Flora | Quarry Substation Site 1 area is generally agricultural and does not support diverse flora. There are no WMAs or NWRs within the siting area. No habitat would be removed from SNAs, WPAs, or USFWS easements. No MCBS sites of biodiversity significance would be included in the site. | Quarry Substation Site 2 area is generally agricultural and does not support diverse flora. There are no WMAs or NWRs within the siting area. No habitat would be removed from SNAs, WPAs, or USFWS easements. No MCBS sites of biodiversity significance would be included in the site. | The Quarry Substation Site 3 and 115 kV Interconnect is generally agricultural and does not support diverse flora. There are no WMAs or NWRs within this area. No habitat would be removed from SNAs, WPAs, or USFWS easements. No MCBS sites of biodiversity significance would be included in this site. |
| Fauna | Construction of any substation would displace wildlife; however, additional impacts on wildlife are not expected. | | |
| Air Quality | During construction there would be limited emissions due to exhaust from vehicles and other construction equipment and fugitive dust from ROW clearing. The magnitude of the construction emissions is influenced heavily by the specific construction activity occurring. Adverse impacts to the surrounding environment would be minimal because of the short and intermittent nature of the exhaust emission and dust-producing construction phases. | | |

| Factor | Quarry Substation Site 1 | Quarry Substation Site 2 | Quarry Substation Site 3 with 115 kV Interconnect |
|---|---|--|--|
| Effects on Archaeological and Historic Resources | | | |
| Archaeological & Historic Resources | No previously identified archaeological resources, historic facility resources, or historic landscapes have been identified within the siting area. | No previously identified archaeological resources, historic facility resources, or historic landscapes have been identified within the siting area. | No information is available concerning this location as it relates to cultural resources within the application. |
| Effects on Rare and Unique Natural Resources | | | |
| Rare and Unique Natural Resources | There are no NHIS occurrences within the Quarry Substation Site 1 or within one mile of the area. No MCBS sites are located at this site location. | There are no NHIS occurrences within Quarry Substation Site 2; however, there are two species of special concern within one mile of the site. No MCBS areas are located at this site location. | There are no NHIS occurrences within the Quarry Substation Site 3 and 115 kV Interconnect; however, there is one state-listed endangered species and one state-listed threatened species within one mile of the site. No MCBS areas are located at this site location. |
| Project Information | | | |
| Cost | \$14,200,000 | \$14,200,000 | \$15,600,000 |



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